BROADER
MEASURES OF SUCCESS

Measuring what matters in education

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Executive Summary

People for Education is embarking on a five-year project to broaden the Canadian definition of school success, by expanding the indicators used to measure progress towards that goal.

For the last two decades, "evidence-based decision-making" has been a mantra for policy-makers, politicians and influential media. What is measured, matters.

The public is hungry for simple ways to understand the strength and effectiveness of our public institutions. We set goals for, measure, and report on things like wait times for hip replacement surgery, numbers of riders on public transit, employment rates for university graduates, and recidivism among convicted criminals.

Nowhere is this more true than for education. Policy-makers, educators, parents, and the public want to know if our schools are successful; they want evidence of what is working well and where the education system is falling short. Over the last 20 years, achievement in two main areas — literacy and numeracy — has become the shorthand for measuring the success of our education system.

But shorthand has its limitations. When there is too much emphasis on narrow goals, important priorities can be overshadowed. People for Education, working with experts and the public from across the country, is identifying a **broader set of goals for education**. Equally important, the goals will be measurable, so students, parents, educators, and the public can see how Canada is making progress.

The goals must cover a range of dimensions of learning that are critical to students' overall success. A possible list of dimensions of learning could include:

- academic achievement
- physical and mental health
- social-emotional development
- creativity and innovation
- citizenship and democracy
- school climate — which can be both a condition that improves students' chances for success and a goal in and of itself

These dimensions of learning overlap, interconnect, and are mutually reinforcing. And each is significant for students' individual experience and knowledge, as well as for the public interest in ensuring graduates who are knowledgeable, healthy, creative, and positive about the practices of citizenship.

Research has shown schools can have a significant and positive impact on all these goals. There are many existing measures that can give us information about schools' progress in these areas.

In this paper, for each of the dimensions of learning on our tentative list, we review the evidence of its importance to individuals and society, we highlight some evidence of how schools can strengthen these capacities in students, and we provide examples of existing measures to challenge those who imagine that such goals are merely aspirations, rather than directions for concrete achievement in schools.

There are currently many international efforts to define the key components of learning and of successful students, schools, and school systems. Groups are examining things such as core competencies, 21st century skills, "pillars of learning," and sets of key skills including deeper learning, college and career readiness, student-centered learning, new basic skills, and higher-order thinking. Some American colleges are beginning to assess so-called non-cognitive abilities as part of their admissions process, but, ironically, these skills are being measured only when students are leaving the public education system and seeking admission to post-secondary education, not while they're in it.

As yet, no one has come up with a simple set of measures that at once encompass the most important factors that are vital components of a strong education, are useful at the school and system level, and are understandable to the broader public.

This measurement set must be able to answer questions like "How is my school doing?" and "Is our education system meeting its goals?"

The point of this initiative is not to argue against testing, nor is it a movement against the "basics." It is instead a call to develop a stronger, broader measurable framework for our schools to ensure our education system is working on what matters most for our children and for Canada.

To begin this process, we are proposing a list of dimensions of learning that — alongside academic achievement — might be part of a more comprehensive set of indicators of success. We identify evidence that success in each proposed dimension is important for the long-term well-being of students and society. And we show that schools have a key role to play in fostering this success.

- Students' **physical and mental health** is critically important both for students' long-term well-being and for their ability to contribute to society. Comprehensive school health programs boost academic achievement, reduce behavioural problems and other barriers to learning, and help students develop the skills they need to be physically, mentally, and emotionally healthy for life. A wide array of validated health measures exist that could be adopted for use by schools. For example, the SHAPES program, funded by Prince Edward Island's Ministry of Health, uses school-based surveys to ask students about their physical activity, healthy eating, mental fitness, and tobacco, alcohol, and drug use. Private sector groups in Canada have been developing workplace health metrics to track health changes. And in England, school inspections include a focus on supporting students' health.
- **Social-emotional development**, also called non-cognitive or interpersonal and intrapersonal skills, contribute directly to students' success in life — their ability to work together, to self-regulate, and to manage challenges. There is a growing body of evidence on effective socio-behavioural interventions in schools. The University

of British Columbia's Middle Years Development Index (MDI) provides a group snapshot of children's development and experiences in five areas: social and emotional development, connectedness, school experiences, physical health and well-being, and constructive use of after-school time. Robert Pianta's CLASS system uses classroom observations of teacher-student interactions to build a plan for children's overall development.

- Capacity for **creativity and innovation** are crucial for success in life and for social prosperity. These attributes can be fostered — and they can be measured — across the curriculum. Some U.S. states are developing a "creativity index" for schools, to measure the range of opportunities available for students to engage in creative work. For example, the Massachusetts Creativity and Innovation Index is considering collecting data on the creative content in each course through things such as a sample of syllabi and lesson plans, the availability and participation rate in afterschool activities, time in the school day allocated to particular subjects, and the focus of professional development. The European Union has begun to measure the extent to which youth have creative and cultural opportunities, including participating in creative or artistic activities, visiting historical monuments, galleries, theatres or films, and participating in sports or leisure activities.
- **Citizenship and democracy:** Quality learning environments promote democratic inclusion and participation and can help create a foundation for engaged citizens, both as children and youth, and as adults. When students have opportunities to exercise leadership and participate in school-supported community involvement, there are positive consequences for academic and social engagement. Complex, cooperative learning activities improve social and intellectual skills, such as communication and critical thinking, and reduce success gaps among students. These activities also have a significant effect on students' attitudes about civic participation and their interactions. There are a number of ways to measure citizenship in schools. For example, the Civic Education Study (CIVED) was used in 28 countries to assess students' knowledge of fundamental principles of democracy; their skills in interpreting political communication; their concepts of democracy and citizenship; their attitudes related to their nation, trust in institutions, opportunities for immigrants and the political right of women; and their expectations about future participation in civic activities including voting, peaceful protest, and raising money for a cause.
- The quality of a **school's climate** also has an impact on students' overall success. Factors in school climate include the availability of educational resources, students' equitable access to opportunities to learn, institutional expectations that students will work hard and achieve, the physical environment, the treatment of students, the quality of interpersonal relationships between and among students, teachers and staff, and strong connections between families, schools, and communities. There are many ways to measure school climate. For example, the Yale Child Study Centre's Comer School Development Program developed a set of school climate scales that look at issues ranging from staff–student relationships, to fairness and equity, to the physical building. The University of Chicago Consortium on School Research

identified five interconnected factors critical for school success: leadership, parent–community ties, professional capacity, a student-centred learning climate, and instructional guidance to help set and plan for ambitious goals for academic achievement.

The research reviewed in this report provides the foundation for an informed discussion about developing a better measure of success. But research is not enough. We need public conversations to explore what are the right goals for our schools and, once we have established these goals, how will we be able to highlight progress towards them.

If you agree that the time is right to ask for an education system focused on what matters most for our children and for Canada, we are asking you to be part of a conversation with us:

- What information would help you understand how your school is doing?
- Are the goals we have identified the most important ones for students and society? Are some missing?
- How do we share information from individual schools about progress towards these goals in a useful way?

People for Education will be hosting discussions online and at conferences across the country. Join the conversation, and together let's build a better measure of school success.

School Success: Measuring what matters

People for Education is embarking on a five-year project to broaden the Canadian definition of school success, by expanding the indicators used to measure progress towards that goal. Working with a range of partners from universities, teacher and principal organizations, local school communities, and school boards, we want to build a consensus about the most important goals for schools, the valid and feasible ways of measuring progress towards those goals, and how information about progress can most effectively be shared with involved professionals and the public.

For the last two decades, "evidence-based decision-making" has been a mantra for policy-makers, politicians and influential media. What is measured, matters. The public is hungry for simple ways to understand the strength and effectiveness of our public institutions. We set goals for, measure, and report on things like wait times for hip replacement surgery, numbers of riders on public transit, employment rates for university graduates, and recidivism among convicted criminals.

Nowhere is this more true than for education. Policy-makers, educators, parents, and the public want to know if our schools are successful; they want evidence of what is working well and where the education system is falling short. But over the last 20 years, achievement in two main areas — literacy and numeracy — has become the shorthand for measuring the success of our education system.

But shorthand has its limitations. When there is too much emphasis on narrow goals, important priorities can be overshadowed. We need to build a better measure of school success. Our aim is to develop a new set of indicators that correspond with broadly held, valued outcomes for education and that are at once manageable, publicly comprehensible, and useful to diverse schools and communities, as well as to local, provincial, and national decision-makers.

The right indicators will not only measure progress towards critical goals for learning but also help focus the attention of educators and citizens on the broader purposes of schooling

— that is, supporting a wide spectrum of achievement and engagement. Developing such a set of indicators will provide a reliable and useful set of information for those working to make schools better. It will help parents and the public become better informed about what is happening in their schools by shining a light on the areas of learning that are vital for students' long-term success. The new set of indicators will also allow connections to be made between goals for schools and societal goals — be they economic, social, environmental, or focused on the promise of equality within democracy. Public indicators of success in a broader range of areas may also act as a prod, in some cases, to challenge the myth that competency in foundational subjects like literacy and numeracy is a sufficient preparation for life and society.

Although current approaches to measuring and reporting on educational quality are useful both locally and internationally, they are, for the most part, limited to literacy and numeracy achievement. These measures are necessary but not sufficient. A growing chorus of voices is asking, "Isn't education about more than that? Don't we need healthy kids who can think; who are innovative and will grow up to be engaged citizens?"

While there is a political consensus that literacy and numeracy are vital goals for schools, their dominance as the measure of school quality may, in part, reflect challenges in measuring more abstract-seeming yet vital concepts such as creativity or school culture.

Yet as these measures have increasingly become drivers of policy and practice in schools, it has also become clear that we need to tackle the challenges of articulating and measuring progress towards goals that reflect schools' role in fostering a fuller range of children's development and potential. Although it will be hard work to identify a broader range of goals, and quantify schools' progress towards them, we need to tackle that challenge in order to ensure our education system is working on what matters most for our children, and for Canada.

What we measure, how we measure it, and how the results of that measurement are used may always be controversial, but we have passed the point where it is an option to stop

measuring progress. Instead, we need to broaden our understanding and measure the areas that contribute to students', schools', and society's success. An increasing number of voices — from inside and outside government — are talking about the importance of ensuring progress on a wider set of goals for schools to promote well-being for students and society; if those ambitions are to become reality, we cannot allow systems of measurement based only on what is easy to measure to remain the basis for accountability systems.

Parents and citizens want to see school performance measured. Indeed, it is evident from the public attention focused on test scores that many Canadians are actively looking for concrete evidence of school quality. Educators also need clear information to help them create and sustain high-quality learning environments across widely diverse, often challenging social and economic contexts. And policy-makers need indicators so they can understand how schools are working and what supports schools need to help them improve. When we develop data for these audiences and needs, however, we need to support and reinforce a broad, rich, and equitable view of the purposes of education and the potential of schooling to support learners and the society we want to live in.

People for Education is a non-profit research and advocacy group that supports a strong system of public education. For 17 years, we have tracked key resources in Ontario schools to provide a picture of how the system is working; we have also engaged in numerous public discussions across Ontario about aspirations for schooling on the part of students, parents, and community members.

Our research reveals great work in public schools to foster children's full development, their sense of citizenship, and their creativity. There are also many laudable examples of efforts to build strong school cultures in which all children can succeed, and there is widespread interest in seeing how we can foster even better education for all children. The measure of success we are discussing will reflect this great work in our schools. At the same time, by putting a clearer public focus on the broader goals of education, with measurable outcomes, we hope to prompt schools to go further, try new things, and

strengthen relationships beyond school walls. We also want to make sure schools have the resources to do this.

The goal of building a better measure of success is not a school reform per se, but it does have implications for schools, systems, and society. And when we talk about something this important, it is critical that the discussion be driven by a broad cross-section of the public, acting in the interests of students and society.

This review paper begins by looking at how large-scale assessment — tests taken by all students at a certain grade or stage — has influenced the policy landscape over the past 30 years. It also looks at some of the key debates that have been part of public and professional conversations about those assessments: the purposes of measurement, sharing results, and the impact on schools and learning. In Part 2, we look at some key goals beyond literacy and numeracy in which schools can and do make a difference in students' experiences and outcomes, and which could be part of a broader measure of success. For each area, we include examples of existing measures that shed light on how particular schools or countries are doing. The purpose of including these examples is not to pass judgment on their usefulness, feasibility, or validity. It is to underscore the fact that all of these dimensions of learning are not merely aspirational, but are susceptible to concrete plans, effective action, and measurable achievement.

In Part 3, we examine some of the international efforts to develop a holistic view of what schools can do. Finally, in Part 4, we look at schools as one part of the broader context of children and youth services, and point to some leading examples of integrated-outcomes frameworks that work together to coordinate efforts to achieve the best outcomes for children and youth.

Part 1: Measurement for accountability and improvement

The rise of indicators and achievement tests

In education, as in other fields, data are a key part of the policy process in many ways — description, monitoring, goal-setting, accountability, transparency, and evaluation — and for many possible audiences.[1] Although we know that good data can be extremely important to helping students learn, there is also a ring of truth in California Governor Jerry Brown's indictment of too much quantitative assessment: "Adding more speedometers to a broken car won't turn it into a high-performance machine."[2] We also know that the exercise of measurement — particularly when the measures are publicly released — can change both what people do with the information gathered through measurement and their understanding about what is important and even possible.[3]

Over the last 20 years, there has been an explosion in the use of "indicators" by policy-makers. Indicators are a labelled collection of data that can be used to compare institutions, such as schools or school systems (or other systems such as health care), to agreed-upon, pre-set standards.[4] Through the use of indicators, institutions can be compared with each other, or with their own past performance. Almost by definition, therefore, indicators are a simplified representation of more complex data and performance, presented in a limited context. Decisions about what information to include, as well as what context must be stripped away to make numbers comprehensible and comparable across different social units, have political implications. When indicators are used to set standards, or measure progress towards a standard, they embed within them ideas about the nature of success or a good society. [5]

In education, for example, during the past several decades, discussions about educational quality and policy have been dominated by indicators of student achievement. These indicators are measured by provincial/state, national, and international assessments of, for the most part, reading, writing and mathematics.[6] They are used with other forms of assessment and reporting — including individual student report cards, assignments,

portfolios performances or in-class test results — to give an overall picture of student achievement at the individual, school, board and system levels.

The emphasis on large-scale assessments reflects a strong policy consensus — a 'global educational reform movement' — on the importance of relatively narrow targets and measurement to spur system-wide reform of public services in general and schools in particular.[7] Their increased use and importance also reflect the increased availability of school-level data, which have made these systems of accountability much more feasible. The use of this data has sparked new discussions in schools about the effectiveness of different teaching and learning strategies. It has also provided an important floor that makes it much harder for struggling learners — or schools — to slip through the cracks.[8]

The most widely used measurable targets share certain key characteristics: they conform to a "core" notion of schooling (the "three Rs"), and there is a substantial research base behind them. As noted educational economist Hank Levin observed,

> A good portion of what makes cognitive test scores an attractive way to assess schools is the field's relatively advanced development. A small sample of students' test performances can be obtained at low cost, and is believed to have predictive power for further education, occupational success, and earnings. These forms of testing have gone through more than a century of development and are highly sophisticated. In contrast, the specific non-cognitive or personality attributes required for successful adulthood are more diffuse and more contested and have not yielded to the straightforward measurement methods used for standardized tests. There is simply no global agreement on what is of consequence beyond student achievement and how it should be measured. For these reasons, and perhaps others, discussions of world-class education and educational systems have been limited to student achievement.[9]

Policy-makers and researchers have argued that test scores in a limited number of subjects are a reasonable proxy for the type of achievement we want schools to foster. Yet even the designers of existing large-scale assessments agree that they are limited — that is, necessary but not sufficient.[10] After 30 years of experience with these assessments, there is a growing body of evidence on how they have affected education systems, much of which suggests that the more familiar and easy measures alone are not the best way to assess

quality or progress in the system. Lessons from this experience will help shape the next generation of indicators.

Impact and debates

Narrowing the curriculum, and resource consequences

It has become increasingly clear that the commitment to producing high-quality measures in a limited array of subject areas — and improving performance in those areas — has had practical and resource consequences across the education system. In Ontario, once the decision to have province-wide assessments was made, the provincial government created the Education Quality and Accountability Office (EQAO), an arm's-length government agency. More importantly, as the government began to link its key public goals to the achievement measured by large-scale assessments[11] across the education system, significant resources were directed towards improving test scores. These include the creation of a dedicated Literacy and Numeracy Secretariat within the Ministry of Education, the deployment of literacy coaches across the school system, a focus on staff planning and professional development and, in most schools, the reorientation of longer and longer blocks of instructional time on the subject areas in which students are tested.[12] As Premier McGuinty's special advisor on education noted, in Ontario there has been increasing "congruence" between EQAO test scores and what is happening in classrooms across the province.[13]

In other jurisdictions, particularly the United States, significant evidence shows that "high-stakes" testing in a limited number of subjects has led to documented changes in classroom practice. Concerns have been raised about an increase in rote learning and narrow test preparation in classrooms, particularly in disadvantaged schools, and considerable narrowing of the curriculum so that science, arts, history, and physical education are squeezed to make room for test preparation.[14] In Canada, although many rich, diverse activities still happen in classrooms regardless of what is measured, these kinds of concerns have also been expressed.[15]

It is important to note that in Canada, the impact of large-scale testing regimes has been felt even though governments have specifically opted against what has been defined as "high-stakes" testing. High-stakes assessments are those to which practical consequences are attached — tests made into graduation requirements, triggering retention in grade, or school closures, tied to teacher compensation or leading to forced reassignment of educators between schools.[16] However, despite efforts to avoid the "stakes" in high-stakes testing, the strong policy emphasis on school-level outcomes of the large-scale assessments means few would dispute that these assessments have a key role in public and professional conversations about how individual students are doing and how schools and the system as a whole are progressing. Because of this public role and policy emphasis, we describe these assessments as "high-visibility" assessments.[17]

Recognition of the impact of these accountability-driven high-visibility indicators has led to calls — in Canada and beyond — to reconsider how school quality is defined and monitored.[18]

Student, school, system? Clarifying the unit of analysis

It is reasonable to work from the presumption that the basic measure of the success of a school system is the success of each student in it. Further, it is particularly important that historically disadvantaged groups have an equal chance at that success. An integrated approach to assessment suggests that parents want information about how their child is doing relative to his or her own prior performance and relative to other students of the same age in his or her class or school and across the province.[19] Members of the general public also have an interest in knowing how the system is doing relative to others. And educational decision-makers want to be able to track the impact of particular reforms or initiatives.[20]

The existing system of high-visibility provincial assessments in Ontario uses a census approach, testing all students in certain grades in a limited number of subjects. The tests in question are considered to be sufficiently deep and broad to make a reasonable judgment

about the students' individual achievement in those areas. These individual results are provided to students and aggregated at the school, board, and provincial levels; the aggregate scores are then used as a measure of the effectiveness of schools, boards, and systems.

This is not the only approach used in Canada for public reporting. For example, reports from the Early Development Instrument (EDI, see Part 2) are based on a 20-minute assessment of each child by the teacher in a kindergarten class. The EDI does not have enough items to provide a valid or reliable report on how individual children in the class are doing, but aggregates data at the classroom level provide a profile of strengths and vulnerabilities for each group of children entering the school system. Evidence from the EDI is being used at the system level to assess the impact of new programs, such as full-day kindergarten,[21] and in some places, as a basis for community-level assessments and planning about service gaps and areas of vulnerability.[22]

Canada also participates in a number of sample-based assessments to compare academic performance between jurisdictions — the Pan-Canadian Education Indicators program, run by the Council of Ministers of Education of Canada, and the well-known Programme on International Student Achievement (PISA) are both based on representative national samples of population.[23] Data from these programs is subject to significant research. In the United States, the National Assessment of Educational Progress (NAEP) — the "nation's report card" — explores student achievement in a much wider band of subjects than state-level high-stakes tests. The NAEP assesses national progress in 12 subjects, including the arts, foreign languages, civics, world history, and technological and engineering literacy, based on a representative sample of students. This approach is much less resource intensive, provides important comparative information about how the system is doing, and allows greater range. It does not, however, act as a safety net for vulnerable children (though it can provide useful information about subgroups); and because it reports at the national level, it is much less likely to be a part of the general conversation about how particular schools are doing.

The measure of success contemplated in our initiative is one that operates at the school and provincial or even national level. It is obvious, and necessary for reasons of privacy, that a public measure of success will include not individual results, but an aggregate. There is a real question as to whether it is necessary to assess every student in every area, to a level sufficient to make an individual report on performance, in order to know how a school is doing. It will also be important to explore how measurements of school quality, success, or effectiveness that are unrelated to student performance, but instead focus on opportunities provided within a school, are used within the school system and made public.

Outcomes, opportunities, processes, and context

An enduring debate has centred on whether measurement should focus on outcomes or on school processes and context. To date, most public reporting has focused on aggregated individual student outcomes: it assumes that students' achievement on tests provides concrete evidence of the effectiveness (or not) of the unspecified activities occurring and resources being used in schools and across the system. One of the fundamental principles of "third way" governance since the 1990s has been the belief that governments should be responsible for outcomes, but that they should also get out of the business of "micromanaging" how those results are achieved.[24] Others argue, however, that outcomes-based judgments on performance are unfair (see "Publicizing results," below) and of limited usefulness because they don't provide information about the contexts or processes that support student learning.[25]

The wide media coverage of research such as People for Education's *Annual Report on Ontario's Publicly Funded Schools*[26] — which emphasizes the importance of school resources, and not outcomes — suggests there is a great deal of public interest in both sides of the equation. As well, based on the experience with outcomes-based reporting over the past two decades, there has been a renewed academic and political interest in ensuring a balance of reporting on school quality that not only emphasizes student outcomes but also provides information about key school processes and students' opportunities for

learning.[27] Some analysts have even suggested that certain contextual factors — school climate, for example — could be treated as outcomes in and of themselves.[28]

Publicizing results: transparency, validity, and ranking schools

A key part of how large-scale assessment data have been used in the past 20 years has been through the public release of aggregate test results at the school level; this evidence of performance is often used to make judgments about the quality of particular schools. And while there is some logic to the Ontario's Royal Commission on Learning's view that the public wants to see the results of some measure of basic student achievement applied in the same way to every student at a few key points in time,[29] using the data in this way has led to controversy and has had political impacts.

The controversy is, to a large extent, a predictable part of the process of using a simplified set of numbers for policy purposes.

Methodologically, as numbers are used more publicly, or in high-stakes and high-visibility contexts, it is critical to ensure that the measures being used to assess performance are valid, reliable, and fair, and that inferences drawn from the assessment can be supported.[30] In Canada, this has been reflected by a number of decisions, notably, the use of large-scale assessments that measure student performance against defined standards ("criterion-referenced assessments"), and not against other students ("norm-referenced assessments").

At the political level, it is also critical to consider and address the impact of publishing data. The most controversial use of test score data has been to create rankings or league tables, either by governments, in some cases, or by advocacy groups. Some believe that school rankings can be used to improve performance, or as useful information to promote choice for parents as consumers making decisions about their children's schools.[31] Others have argued that rankings are a simplistic and often inaccurate way of judging quality in schools. They say rankings can have a corrosive effect on student and teacher morale, and that the

public nature of the information sharing can redouble the narrowing tendencies of the measures. Critics have also argued these rankings reinforce negative perceptions about schools in socio-economically challenged areas, and that this type of high-stakes or high-visibility assessment can lead, paradoxically, to unintended consequences, such as "gaming the system" by, for example. focusing efforts on 'bubble children', those whose performance is near the cut-score for proficiency as opposed to lower- and higher-performing children where changes in performance will not affect the school's standing. [32]

Educators have consistently resisted the idea that the results of large-scale assessments, particularly in a narrow band of subjects, reflect the range of their responsibilities and goals, and they have strenuously objected to the use of numbers to judge performance when they have little control over the conditions under which they work.[33]

Does changing the measure of success help struggling students and schools?

Canada has a relatively high level of equity and excellence in its school system.[34] However, what limited disaggregated data exists in Canada points to persistent gaps — at the school and individual level — in achievement and experiences in school based on students' background, including their socio-economic status, racial, or ethnic background, Aboriginal heritage and/or disability.[35] Current measures of success have made it harder for those students to slip through the cracks completely and, arguably, have allowed the government to identify and support schools with significant numbers of students who are not achieving the provincial standards — schools that often serve a disproportionate number of students facing other kinds of disadvantage. There are a number of ways a shift in the measures of success might provide additional support for these disadvantaged students.

If a broader measure of success were to include things such as measures of school climate, resources or opportunities, it would help to provide system-level accountability for ensuring schools have access to resources and processes that have a demonstrated effect on students' achievement and well-being. A clear body of literature shows how to use data to improve equity of outcomes. The Ontario government's Roots of Youth Violence was only the most recent inquiry to recommend collecting educational data disaggregated on

the basis of student demographics. It also recommended using "floor" targets, to set a minimum acceptable level of attainment — a societal "bottom line." Roots of Youth Violence recommended floor targets to "avoid the reality that if an average is used, the target can be met by having the best-off improve their performance even if the worst-off make no progress at all or even fall further behind. Averages hide a myriad of policy and program sins, and they fundamentally fail to identify the neighbourhoods or institutions needing the most help."[36]

Particularly in light of the evidence (largely from outside Canada) that the schools that have seen the most dramatic narrowing of the curriculum in light of testing requirements are disproportionately those with students from vulnerable groups, a broader set of measures of school quality or success would help provide accountability for ensuring that all children receive a balanced curriculum that meets the wider range of their needs. It is not clear these opportunities are equally distributed now, and evidence suggests that a well-rounded education — with an emphasis on social-emotional learning, physical activity, and health, creativity and active citizenship — may in fact contribute significantly to greater engagement, well-being, and achievement, particularly for disadvantaged students. Right now, enriched programs that emphasize well-rounded learning, with high expectations for learning and expanded opportunities for citizenship and creative learning — such as the International Baccalaureate program — are more likely to be offered in schools where there is a disproportionately high number of well-educated and wealthier families.[37]

Most evidence suggests that there is a relatively strong interrelationship between the dimensions we have put forward as possible measure of success, making it harder to reduce school quality to a simple ranking or index. A school with outstanding opportunities for fostering democracy and citizenship in its students would, for example, be able to highlight these strengths even if the school next door had stronger achievement in creativity and innovation, or even literacy and numeracy.

Schools can't solve all social problems (especially by themselves)

Another key concern about broadening the scope of what is measured is the risk of giving schools, educators, and school systems even more work and greater responsibilities. There are concerns about laying unmanageable burdens on schools without the resources required to meet them: unfunded mandates. Teachers may also argue that neither their training nor the imperatives of their workplace are focused on students' overall development; some will also note that what they want to do is 'just teach'. Schools cannot be expected to solve profound health and social problems in isolation; this mandate is beyond their capacity and expertise.[38] Educators consistently note that it is very challenging to find the time to work on areas like physical health or strong community connections within the scope of existing demands on their time.[39]

There are also concerns that introducing public measurement in areas such as health or social-emotional development might dilute schools' unique role as learning institutions. Critics have forcefully argued that a "warm yet welfarista" environment[40] that does not focus on achievement does not serve anyone particularly well — especially when it compromises high academic expectations for the most vulnerable children.

Others argue that families are primarily responsible for taking care of students' social-emotional development or values around democracy and citizenship. Those holding this view may argue that schools should not interfere in these areas, where morals and beliefs are more likely to be at the forefront, or they argue that by explicitly promoting the social development role of schools, advocates are promoting a "nanny state."

But school is where the vast majority of children spend almost half of their waking hours. And although schools' social role is quite different from that of families',[41] extensive psychological and sociological evidence documents the profound socialization and developmental effects of schooling (for better or for worse),[42] whatever level of prescription is attached to the programming in these areas. History also makes it clear that the broader role of schooling — enhancing civic participation and supporting preparation

for a full range of life's challenges — has been a key driver in the establishment and building of public education systems since the beginning.[43] Not surprisingly, this idea — that there is a broader role for schooling — is one of the main drivers of current thinking about the skills and competencies that will support children in adapting to an unknown future (see Part 3).

But while educators and others may reject the notion that schools need to fix the full range of social and health problems facing society and young people, a pressing need remains: how to better articulate what schools can and should contribute to addressing these issues. Better defined expectations in these areas may create clearer recognition and support for educators' work on these issues, and will also likely foster cooperation with other sectors, including health and social services, that are important for children's development. Measuring progress, achievement or supports in a wider range of areas underscores the importance of schools' more complete work.

That said, better defining schools' necessary contributions in these areas cannot replace the role of an improved network of complementary services and opportunities for children and youth — from health, social service, recreation, and leisure activities to opportunities to contribute within the larger community. It is clear that when schools have stronger connections to these services and to community partners — something that doesn't happen without considerable effort — they are able to provide the essential enrichment and support they need to enable and enhance learning.[44] Therefore, a sensible set of measures for schools should fit within a broader set of outcomes for children and youth. This set of measures should assess the quality of schools' connections to the services and supports that are at the core of better overall outcomes.

Part 2: Measuring schools' success: key dimensions of learning

This section looks at some of the critical areas in which schools can — and already do — make a difference in children's experiences and achievement, and which could become part of a broader measure of success. Academic achievement, as reflected in large-scale assessments, has been discussed above. In this report, we've identified five (interrelated) dimensions of learning, beyond academic achievement, that have a significant impact on students' and society. For each of these dimensions, there is clear evidence that schools can make a difference for students' learning, behaviour, and outcomes.

- physical and mental health
- social and emotional development
- citizenship and democracy
- creativity and innovation
- school climate and supports

Each dimension we have identified can be measured. For each, in a sidebar, we include examples of existing measurements. We are not endorsing any of these measures at this point, nor assessing their validity, feasibility, or suitability. Instead, the examples illustrate that this work is already going on in schools, and that it is already possible to track the processes and outcomes of this work in meaningful ways.

Physical and mental health

"Comprehensive school health" (sometimes referred to as CSH) is a concept that encompasses more than physical and health education classes. It encourages schools to address social and physical environments, teaching and learning across the curriculum, school policies, and the development of partnerships and services. Comprehensive school health has been shown to boost academic achievement, reduce behavioural problems and barriers to learning, and help students develop the skills they need to be physically, mentally, and emotionally healthy for life.[45] Comprehensive school health has been endorsed by the Pan-Canadian Joint Consortium on School Health (JCSH), a group made up

of federal, provincial, and territorial departments of education and health. Other international agencies, such as the Organization for Economic Cooperation and Development (OECD) and the World Health Organization, have emphasized the significance of schools as an effective and cost-effective site for health promotion.[46]

Strengthening health practice in schools is critical. Research suggests that Canadian children's health outcomes are poor and, in fact, declining.[47] Many schools struggle to provide the mandated levels of physical activity.[48] As well, it can be difficult to ensure that all students have a sense of belonging at school, that adults in the school care about them, and that they are well-regarded by peers — all issues important to students' health.[49] Only a minority of schools have programs to support students' mental health needs at the universal promotion/prevention level, or through timely identification and service connections for those with more acute needs.[50] Research suggests that a narrow emphasis on academic achievement at schools and in policy is a significant barrier to implementing comprehensive school health.[51]

A wide array of validated health measures could be adopted for use by schools, including those focused on increasing the level of physical activity at schools,[52] involving children in measuring and reporting on their own physical fitness,[53] measuring schools' health policy and programs,[54] and student self-reporting tools, which measure their sense of belonging, well-being, positive relationships, and risky behaviours.[55] (See sidebar "Measurement supporting good health.")

Measurement supporting good health

- Prince Edward Island's **SHAPES** program uses school-based surveys to ask students about their physical activity, healthy eating, mental fitness, and tobacco, alcohol, and drug use. The survey is funded by the province's Ministry of Health. The information gathered supports provincial policy on health promotion and prevention, and generates school-specific reports that provide data on health and trends over time and recommendations for action by schools. The success of SHAPES highlights the

potential for cooperation between provincial government departments and recognizes the role of schools in promoting better health.

- In the United Kingdom, the educational accountability organization **OFSTED** performs targeted reviews of the work of a sample of schools in providing appropriate support for students' physical and mental health, thereby helping to identify particular areas and strategies for improvement.[56]
- The Conference Board of Canada, working with corporate partners, has done considerable research into the importance of healthy workplaces. Their research includes identifying **wellness metrics** to track the elements of effective workplace health strategies, workplace health changes and the benefits of supporting the physical and mental health of workers — including reduced absences, higher productivity, and lower stress.[57]

Social-emotional development

One area that is closely linked to health and well-being is students' social-emotional development or, as others have described it, their non-cognitive skills or interpersonal and intrapersonal skills.[58] These skills range from self-regulation (the ability to plan and monitor behaviour) to the ability to work in diverse groups. There is strong evidence that these skills are critically important both for students' long-term well-being and for their ability to contribute to society.[59] A growing body of evidence also points to the potential for effective educational interventions in these social-emotional areas, whether through particular programs[60] or through broader pedagogical approaches, such as a focus on teacher–student relationships and interactions.[61] In Ontario, the new school assessment framework includes significant information about these "learning skills" as part of children's report cards;[62] but children's achievement in these areas is not included in the system of public measurement. Recent work by Ontario's Ministry of Children and Youth Services has lead to the development of a key resource on youth development, Stepping Stones, which maps development and attempts to establish common language and understandings between different parts of government (and, ideally, families and youth themselves) for understanding the supports that are most critical for young people.[63]

Strikingly, the measurement of quality in early childhood settings has a much stronger focus on these critical skills and the conditions that support them.[64] The child outcomes tracked at school entry, through programs such as Canada's Early Development Instrument, incorporate five areas: physical health and well-being, social knowledge and competence, emotional health and maturity, language and cognitive development, and general knowledge and communication skills.[65] In an effort to monitor and improve awareness of quality in child care, governments are increasingly developing public reporting systems that also include fairly detailed, inspection-based information about the settings and processes.[66] As early childhood education and care becomes a part of the education system — and attracts more resources — the significance of this experience may grow.

There have also been also attempts to develop standardized measures of non-cognitive abilities as a part of the college admissions process, which has historically been dominated by course grades and, in the United States, cognitive tests like the SAT. The contribution of these wider sets of attributes to lifelong success is increasingly recognized alongside the importance of the classic cognitive tests.[67] (See sidebar "MDI and CLASS: Measuring students' development and experiences at school.") The development of these measures is interesting, in that it helps demonstrate the possibility for tracking progress in these areas. But clearly, social-emotional development is not important just for those seeking admission to post-secondary; and tracking these strengths only when students are leaving school robs the K-12 system of the opportunity to intervene early enough to affect the outcomes.

MDI and CLASS: Measuring students' development and experiences at school

- The **Middle Years Development Index (MDI)**, developed at the University of British Columbia, is administered by teachers in grade 4 (and is being piloted in grade 7). The MDI provides a group snapshot of children's development and experiences in five domains: social and emotional development, connectedness, school experiences, physical health and well-being, and constructive use of after-school time.[68] Like the Early Development Instrument (developed at McMaster

University), the MDI has been used to support community-level planning around the needs of children across education, public health, community and recreation services, and other areas.[69]

- The **Classroom Assessment Scoring System (CLASS)** is a system of structured classroom observation of teacher–student interactions used in all Head Start programs across the United States. It has also been adapted for elementary and secondary schools. The focus of CLASS is not simply on assessing the quality of the classroom environment and interactions, but on providing a basis for planning to enhance children's overall development.[70]
- A number of companies have developed measures of school climate and student engagement. The research initiative **What did you do in school today?**, headed by Douglas Willms of the University of New Brunswick, developed measures — available for sale to school boards — that help create a profile of key issues of student well-being at the school and board level, as well as a number of different tools to share results with the school community and educators. This tool is being used in several Canadian provinces.

Creativity and innovation

Creativity and innovation are crucial for success in life and for social prosperity.[71] Creativity can be fostered through students' direct engagement with the arts, which has been consistently shown to boost student engagement and achievement, with particular benefits for vulnerable youth.[72] It is also a vital part of achievement in fields such as science and business.[73] Creativity can be understood as a process, a learnable way of thinking, and a two-way link to culture and heritage. Creativity can be fostered and reinforced across the entire curriculum and extra-curricular activities.[74] Equitable opportunities for engaging creatively across students' school experience are important for the quality of student learning, as is engagement in creative projects (in whatever subject gives students significant learning opportunities to develop their expressive and interpersonal skill). Outstanding creative work is produced in our schools every day, but it receives little policy emphasis, and there are limited opportunities for sharing best practices in these areas.

A number of instruments meaningfully measure creativity as an outcome — for example, emerging college admissions assessments.[75] Another approach, supported by U.S. states that are developing a creativity index for schools, is to measure the range of opportunities available for students to engage in creative work. Perhaps the best-known systems for rating creativity were developed to measure the creative capacity of cities or regions, not schools.[76] While a good deal of research has been done on this issue, there is also considerable room for conceptual work and development in terms of school-based measures. The sidebar "Measuring creativity at school and among youth" describes two initiatives that highlight some of the opportunities available.

Measuring creativity at school and among youth

- The state commission developing the **Massachusetts Creativity and Innovation Index** is examining cost-effective ways to measure creative opportunities. It has considered collecting data on the creative content in each course through a sample of syllabi and lesson plans, the availability and participation rate in after-school activities, time in the school day allocated to particular subjects, the focus of professional development, the availability of dedicated funding for creative projects ranging from performances to science fairs, and perceptions of students, parents and educators of the existence of creative opportunities. It has also considered on-site reviews by inspectors tied to a process to accredit schools as "emerging," "proficient," or "exemplary" in providing creative opportunities.[77]

- The European Union, as part of its overall youth strategy, has begun to measure the extent to which youth have creative and cultural opportunities. In a large poll, the **Eurobarometer**, over 19,000 young people (from all countries in Europe) were asked whether they had participated in creative or artistic activities in the past 12 months, visited historical monuments, galleries, theatres, or films in the last 12 months, or participated in sports or leisure clubs or activities, and whether they were learning at least two foreign languages.[78]

Democracy and citizenship

Democratic inclusion, mutual acceptance, peace-building or conflict resolution, and participation are important elements of quality learning environments, and can help create a foundation for engaged citizens, both as children and youth, and as adults. When students have opportunities to exercise leadership, participate in school-supported community involvement, and have a voice in restorative peacemaking and conflict resolution,[79] positive consequences emerge for academic and social engagement. The availability of these opportunities also reflects the democratic values as set out in documents such as the United Nations Convention on the Rights of the Child, to which Canada is a signatory. The Convention establishes children's right to be heard and to participate as much as possible in decisions that affect them, and identifies among the purposes of education that it teach respect for human rights, for one's own culture and national identity and for that of others, and for the natural environment.[80]

Although citizenship and conflict-resolution learning goals are included in school curricula across Canada, they come to life through innovative pedagogy and student-engagement activities.[81] It has been shown repeatedly that complex, cooperative learning activities improve social and intellectual skills such as communication and critical thinking, and reduce success gaps among students.[82] These activities also have a significant effect on students' attitudes about civic participation and their interactions. Unfortunately, research also shows that these opportunities are not always distributed equally between schools.[83]

There are a range of ways to measure the presence of these opportunities, as well as students' knowledge of democratic institutions and their attitudes towards citizenship and democratic values. (See sidebar "Measuring civic knowledge, attitudes, and school practices.)

Measuring civic knowledge, attitudes, and school practices

The International Association for the Evaluation of Educational Achievement (IEA) conducted a major international study of students' knowledge of democracy and

citizenship, national identity, and social cohesion and diversity — the **Civic Education Study (CIVED)**. After initial work on case studies in several countries, the Civic Education Project was used by 28 countries to assess students' knowledge of fundamental principles of democracy; their skills in interpreting political communication; their concepts of democracy and citizenship; their attitudes related to their nation, trust in institutions, opportunities for immigrants, and the political rights of women; and their expectations about future participation in civic activities including voting, peaceful protest, and raising money for a cause. [84]

UNICEF has pioneered a **Rights Respecting Schools** program in 1,600 schools in the United Kingdom, and is now piloting the program in Canada. It is a whole-school program shown to foster engagement and safe, inclusive learning environments. The program incorporates detailed pre- and post-evaluation of rights awareness, participation, teaching and learning, and leadership based on student focus groups and surveys for staff and administrators. [85]

School climate and quality learning environments

The quality of a school's climate also has an impact on students' experiences in school and their capacity to achieve academically. How a school is organized and the availability of educational resources are important physical dimensions of school climate. Social dimensions include the equitable and fair treatment of students and the quality of interpersonal relationships between and among students, teachers, and staff.[86] Academic dimensions include students' equitable access to opportunities to learn and institutional expectations by school staff of all students to work hard and achieve.[87]

Efforts at comprehensive school reform, including those pioneered by the Yale Child Study Centre's Comer School Development Program, the University of Chicago Consortium on School Research, and others, have consistently demonstrated the ability of educators, acting with the right supports, to purposefully reshape aspects of the school environment.

(See sidebar "Measuring school climate and the presence of essential supports for school success.")

Measuring school climate and the presence of essential supports for school success

There are a number of well-established measures to assess student and other stakeholder perceptions of school climate. The **Yale Child Study Centre's Comer School Development Program** developed a set of school climate scales for elementary, middle, and secondary school students and for parents and staff.[88] The scales look at issues ranging from staff–student relationships, fairness and equity, the physical building, and many others. The Quality of School Life Scale, which measures (1) satisfaction with school in general, (2) commitment to school work, and (3) attitudes toward teachers, was validated at the elementary, middle-school and secondary levels.

A notable set of measures that encompass aspects of school climate and academic opportunities have been developed by the University of Chicago Consortium on School Research as part of its effort to identify "**essential supports for education.**" The Consortium identifies 14 indicators of five interconnected factors that it argues are critical for school success: leadership as the driver for change; parent–community ties; professional capacity; a student-centred learning climate; and instructional guidance to help set and plan for ambitious goals for academic achievement for every student. [89]

Clearly, key dimensions of students' development and of school success could be incorporated into a more meaningful definition of school success, alongside traditional measures of literacy, numeracy, and graduation. While there is overlap and interconnection between the dimensions of learning, they are also mutually reinforcing. Each area is significant both for students' individual experience and knowledge, and for the public interest in ensuring graduates who are healthy, have a strong social-emotional foundation,

are creative with the capacity for innovation, and are experienced in and positive about the practices of citizenship. We have also seen that school environments have a strong impact on students' ability to achieve these aspirations.

Part 3: International efforts to define successful schools and students

A number of areas beyond literacy and numeracy are important for students' learning, their future lives, and the societies in which they live, both now and as adults. Within these areas, existing measures can be used to assess progress or opportunities to develop competences. People for Education is calling for the development of a better measure of success, one that integrates current knowledge about both what and how students need to learn across these different dimensions.

This call does not come in a vacuum: it builds on sophisticated research and advocacy work being done around the world to articulate appropriate goals for education and help develop the plans and measures required to design school systems around these goals. To give some context, it is useful to compare other influential efforts to articulate a broad framework for education. As one would expect, there is considerable overlap between the efforts examined here (and others[90]), so the purpose of this review is to highlight points of difference.

UNESCO: Four Pillars of Learning

In 1996, UNESCO launched an international commission on education for the 21st century. Its report, *Learning: the Treasure Within,* identified four pillars to guide education throughout life: Learning to Know, Learning to Do, Learning to Live Together, and Learning to Be.[91] UNESCO's four pillars provided the theoretical framework for the Composite Learning Index established by the Canadian Council on Learning, which charts the community-level availability of lifelong learning resources.[92] The pillars emphasized that students need skills to keep on learning and to be receptive to emerging knowledge. In

addition to the skills required for employment, students need skills ranging from people skills to technical mastery. Students (as lifelong learners) need to both appreciate diversity and have skills to allow them to cooperate; and all individuals need the opportunity to develop mind and body and to explore their own potential.

The UNESCO pillars are important for a number of reasons. They provide a broad perspective on learning, health, and well-being; they reflect wide international consultation; and they have influenced policy in Canada. But while they represent an important vision statement emphasizing the broad goals of education and were developed at the same time as large-scale testing became a central aspect of accountability regimes, there are few metrics attached to the goals.

The OECD's highly influential Programme for International Student Assessment (PISA) looks at what 15-year-old students know and can do in three subjects — literacy, math, and science. However, the OECD has recognized that assessment in a few subjects does not measure the much wider range of competencies required for students' success in life and a well-functioning society.[93] Accordingly, through its DeSeCo project, the OECD has *de*fined and *se*lected key *co*mpetencies that:

- contribute to valued outcomes for societies and individuals;
- help individuals meet important demands in a wide variety of contexts; and
- are important not just for specialists but for all individuals.[94]

The key competencies are that "learners can use tools (e.g., language, technology) interactively," can "interact in heterogeneous groups," and can "act autonomously." The DeSeCo authors also emphasize the interdependencies among the competencies.

Although these competencies may seem general in nature, what is distinctive about the DeSeCo framework is its emphasis on the complementarity of individual and collective goals. The OECD model stresses that individual success is intertwined with a successful society, and that the two have common prerequisites. Of all the studies we reviewed for

this report, this one was the most systematic about looking for the connections between the competencies that students develop through schooling and the goals for society as a whole, an element People for Education has also identified as being a key component for building a better measure of school success.

A quarter-century of 21st century skills

In the past decade, the most institutionalized effort in the United States to re-examine the requirements of education systems has been the Partnership for 21st Century Skills, an advocacy organization developed to emphasize a range of competencies beyond the three Rs. This national partnership (which originally consisted of the U.S. Department of Education working with companies such as Apple, AOL Time Warner, Cable in the Classroom, Microsoft, and Dell),[95] has enlisted a large number of state governments[96] to try to develop the supports and standards required to build these skills. The Partnership emphasizes the need for schools to focus on the "4Cs" — critical thinking, communication, creativity, and collaboration. The partnership argues that the 4Cs can and should be developed across different subject areas.

Unlike the UNESCO and OECD initiatives, the Partnership's vision highlights both outcomes (the 3Rs and the 4Cs) and essential supports for the desired outcomes — the processes and opportunities that support equitable student success, such as standards and assessments, curriculum and instruction, professional development, and learning environments.

The Partnership has also had a significant impact in popularizing its language, which is reflected in a variety of Canadian efforts. For example, the Government of Ontario recently received a report from Michael Fullan, former premier Dalton McGuinty's education advisor, calling for the development of a set of higher-order skills, which he termed "the six Cs": character, citizenship, communication, critical thinking and problem-solving, collaboration, and creativity and imagination. He argues that the underlying purpose of focusing on these skills is to promote the well-being of the whole student and society, and

that to achieve these purposes requires taking them from vague abstractions to measurable realities.[97]

The impact of this model has also been seen in the emergence of a Canadian working group, "C21 Canada" — including the Canadian Education Association and several IT and educational resource companies — which developed its own list of seven critical skills at a recent workshop. In 2006, The Conference Board of Canada worked explicitly with the Partnership for 21st Century Skills to develop its 2006 report, *Are They Really Ready to Work*?, which was based on interviews with senior executives in corporate Canada.

The Partnership's work is also visible in the Conference Board's list of employability skills 2000+,[98] which it defines as the skills required to enter, stay in, and progress in the workforce. Employability skills are classified into three broad areas: fundamental skills (communicate, manage information, use numbers, think and solve problems); personal management skills (demonstrate positive attitudes and behaviours, be responsible, be adaptable, learn continuously); and teamwork skills (work with others, participate in projects and tasks).

Another international working group under the 21st century skills umbrella is ATC21S (Assessment and Teaching for 21st Century Skills), which has a fairly detailed research program examining how these skills can be implemented at the system and classroom levels. ATC21S is a collaboration between several major IT companies (Microsoft, Intel, and Cisco); the University of Melbourne, Australia; and the governments of Singapore, Finland, Australia, the United States, and Costa Rica. ATC21S worked with a large international group of researchers to develop a typology that clusters 10 basic 21st century skills into four groups:

- ways of thinking — creativity, critical thinking, problem-solving, decision-making and learning
- ways of working — communication and collaboration
- tools for working — information and communications technology (ICT) and information literacy

- skills for living in the world — citizenship, life and career, and personal and social responsibility[99]

A major focus of the group is to develop systems of assessment. Perhaps unsurprisingly, given its membership, there is a strong emphasis on the use of technology both in students' learning experiences and as a part of the assessment process. It particularly emphasizes the importance of high-visibility assessments to communicate expectations and to promote accountability and transparency. Using a pyramid model, with high-visibility assessments at the top, ATC21S argues for the importance of assessments that provide information that is useful to all educational actors — students and teachers in the classroom, school and district administrators, and policy-makers — because they need to be able to gauge progress, allocate resources, etc.

While the project is still a work in progress, a white paper it produced sets out some ideas about how to measure the knowledge, skills, and ethics/values or attitudes required for each of the 10 basic skills. For example, collaboration and teamwork require an assessment that helps examine the individual contribution to a group effort, and that takes into account cultural differences when trying to determine the degree to which students interact effectively with others, work well in diverse teams, manage projects, and guide, lead, and are responsible to others. The paper pointed to some emerging (but still underdeveloped) computer simulations and to standardized measures used extensively by employers that could be adapted for educational purposes.[100]

Skills for life and work

Finally, in the United States, a major report by the National Academy of Sciences (NAS) has tried to synthesize these disparate bodies of work around key skills: deeper learning, 21st century skills, college and career readiness, student-centred learning, next-generation learning, new basic skills, and higher-order thinking.[101] Although some of these skills may seem to overlap in terms of the underlying skills or competencies, the authors used cluster analysis to identify fundamental groups of closely related competencies into three areas —

cognitive, intrapersonal and interpersonal — that incorporate abilities and personality factors, both of which they see as changeable.

Because this research is a recent, authoritative effort to synthesize all the activity around the competencies for the future (although the report is distinctly skeptical about how truly "new" the 21st century skills are), it is interesting to examine how the NAS organizes the skills and attitudes that have been identified as a prerequisites for success in life and work ahead. (See "NAS: skills and attitudes for success.")

NAS: skills and attitudes for success*

Clusters of 21st century competencies:[102]

Cognitive competencies include:

- Cognitive processes and strategies: critical thinking, problem-solving, analysis, reasoning/argumentation, interpretation, decision-making, adaptive learning, and executive function
- Knowledge: information literacy (research using evidence and recognizing bias in sources), information and communications technology literacy, oral and written communication, active listening
- Creativity: creativity, innovation (complex problem-solving skills, idea generation)

Intrapersonal competencies include:

- Intellectual openness: flexibility, adaptability, artistic and cultural appreciation, personal and social responsibility (including cultural awareness and competence), appreciation for diversity, adaptability, continuous learning, intellectual interest and curiosity
- Work ethic/conscientiousness: initiative, self-direction, responsibility, perseverance, productivity, grit, Type-1 self-regulation (metacognitive skills, including forethought, performance, and self-reflection), professionalism/ethics, integrity, citizenship, career orientation
- Positive core self-evaluation: Type-2 self-regulation (self-monitoring, self-evaluation, self-reinforcement), physical and psychological health

Interpersonal competencies include:

- Teamwork and collaboration: communication, collaboration, teamwork, cooperation, coordination, interpersonal skills, empathy/perspective-taking, trust, service orientation, conflict resolution, negotiation
- Leadership: leadership, responsibility, assertive communication, self-presentation, social

influence with others

*Adapted from *Education for life and work: Developing transferrable knowledge and skills in the 21st century,* pp. 2-12–2-14.

The NAS panel argue that these clusters of competencies were important for what they describe as "deeper learning" — and that they can be taught and learned. Doing so, they argue, requires clear learning goals and the development of assessments that chart progress. Their review suggests that current instructional practices and assessments and the common standards under development in the United States focus on only a subset of the cognitive competencies, and have "uneven" coverage of 21st century competencies, "particularly in the interpersonal and intrapersonal domains."[103] The research base for this important study is clearly based in individual psychology, with less emphasis on what society needs: accordingly, for example, skills, knowledge, and attitudes directly relating to citizenship are explicitly excluded from the analysis. Although the report's findings are significant, some of the language used is aimed at experts and will need to be tailored to the general public before the findings can be acted on.

Indigenous perspectives

First Nations, Métis and Inuit peoples have clearly indicated that the existing measures of success and achievement in schools are not a good fit with Aboriginal cultures and worldviews. There are two major problems: [1] first, using existing measures, if there is too strong an emphasis on Aboriginal achievement gaps (e.g. graduation rates) – it can reinforce deficit conceptions of Aboriginal learners at the same time as it understates the contextual factors, such as socio-economic and health status which affect achievement rates. The second issue is that these measures fail to reflect key tenets of Aboriginal learning – in particular, the emphasis on learning as a holistic process with a physical,

[1] See e.g. Royal Commission on Aboriginal Peoples. (1996). Report of the Royal Commission on Aboriginal Peoples: Volume 3, Gathering Strength. Ottawa: Supply and Services Canada; Dion, S. D., Johnston, K., & Rice, C. M. (2010). Decolonizing our schools: Aboriginal education in the Toronto District School Board (pp. 114). Toronto: York University; Chiefs of Ontario response to report of Auditor General on Aboriginal Education, Feb 7, 2013 (on file with author).

mental, spiritual and emotional component. Although there is a considerable diversity of perspectives and worldviews between and among First Nations, Métis and Inuit groups, almost all want to see the promise of the right to education in Article 14 of United Nations Declaration on the Rights of Indigenous Peoples realized: education that is appropriate to their own cultural methods of teaching and learning; education in indigenous languages, and access to state education systems without discrimination.[2]

The Aboriginal Learning Centre of the Canadian Council on Learning, before it was disbanded,[3] developed a series of reports on measuring success in Aboriginal communities.[4] Developing appropriate measures of success was identified as a priority for strengthening Aboriginal learning across Canada. Key challenges were to find ways to measure success that were holistic, lifelong, experiential, community based, spiritually-oriented, rooted in Aboriginal cultures and languages, and which integrate both western and Aboriginal knowledge. The Centre worked to develop a series of models of success – reflecting Inuit, Métis and at least one First Nation perspective. These models, in turn, formed the basis for one effort to measure success in way that was culturally relevant, focused on educational opportunities as well as outcomes, and which built on strengths (for example, looking at volunteering as a measure of civic engagement and noting that levels of volunteerism in Aboriginal communities exceeds Canadian averages; or examining access to elders both for those who live in Aboriginal communities and those who live away from them).

[2] United Nations Declaration on the Rights of Indigenous Peoples, (2008) GA 61/295, retrieved from http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf. Article 14, the right to education, specifically provides for indigenous peoples to 'establish and control their education systems'. For some groups, control will be exercised directly by a First Nations or an Inuit government; others specifically assert the right to some control and input over Aboriginal education in the public system as well; see for example, the positions of the Chiefs of Ontario.

[3] The Centre operated under the direction of Dr. Vivian Ayoungman and Dr. Marie Battiste.

[4] Canadian Council on Learning. (2007). Redefining how success is measured in First Nations, Inuit and Métis Learning (pp. 47). Ottawa: CCL; Canadian Council on Learning. (2009). The state of Aboriginal learning in Canada: A holistic approach to measuring success (pp. 77). Ottawa: CCL.

Part 4: Frameworks for children and youth

The importance of a holistic approach to learning — an approach that, alongside a strong academic focus, includes aspects of physical and mental health, social and emotional development, creativity and innovation, citizenship and democracy — makes clear the need for connections beyond the school that can support or enhance students' development in these areas. A number of integrated frameworks for child and youth development emphasize that school is an essential part of the services and institutions that contribute, alongside the family, to childhood experiences that help all children develop their potential.

The beginnings of a children and youth policy framework in Ontario

In 2008, the Ontario government accepted the recommendations of a major report on youth and youth violence, *Roots of Youth Violence*, which included the recommendation that the province develop an overall youth policy framework that had specific outcome goals:

> Underpinning all that we propose are four key needs: information, measurement, targets and reporting.... We must first know where we are going, how we will get there, how we will know whether we are making progress, and how we will know when we have arrived. For these reasons, our proposed youth policy framework calls not only for a shared vision and agreed-upon principles, but also for specific outcome goals in a number of areas ranging from poverty and racism to education, mental health and interactions with the justice system.... The important thing is to shift the culture towards measuring outcomes. That culture shift, and the energy and synergies it will produce, will drive improvements in the nature and quality of the information available in many domains, allowing the indicators to be increased and made more sophisticated over time.[104]

As mentioned in Part 1, the Roots of Youth Violence report emphasized the importance of disaggregated data and floor targets that prevent averages from obscuring the progress — or lack of progress — of the most vulnerable students. The province launched consultations on a strategy, and the call for such a policy framework was taken up by various community organizations. But no outcomes-based framework is in place yet, although a large, youth-directed working group did develop a useful resource on youth development and supports, Stepping Stones.[105]

The recent Ontario Youth Action Plan, developed jointly by the Ministry of Children and Youth Services and the Ministry of Community Safety and Correctional Services (the Ministry of Education was not a partner), calls for additional coordination of programs for youth, noting both the complexities of coordinating 70 programs for youth across 14 ministries and the importance of better connections to community agencies serving youth. This action plan is far from being a comprehensive framework, however, since it limits its recommendations to strengthening program evaluations.

England and Wales: Every Child Matters

Every Child Matters was a broad-based approach to reforming children's services in England and Wales, based on five outcomes for all children: be healthy, stay safe, enjoy and achieve, make a positive contribution, and achieve economic well-being.[106] To support these outcomes, there were several key areas of reform, including support for parents and caregivers, early intervention and protection, accountability and integration, and workforce reform. Since the election of the Conservative government in England, the names of many policies have changed, but major elements remain. Accountability was linked to the goal of integrating services for children and youth, including education, and a number of measures were put into place both to support working together and to measure progress towards the goal of providing holistic care, support, and opportunities to "every child."

The measures included promoting information-sharing between different government agencies "in the best interest of the child" and implementing common processes between different service providers, such as a common assessment framework or a team working under lead professionals for children with multi-service needs. All schools were expected to become "extended schools," with linked child care in primary (elementary) school, family learning opportunities, and homework support between 7 a.m. and 6 p.m. In each "local area" (district) a "full-service extended school" was to offer a range of health and social services. Responsibility for education and other children's services was combined at the ministerial and local authority levels, and OFSTED, the national educational inspection

services, began a process of combined inspections of schools that housed the supporting services.[107]

Finland: Children and Youth Policy Program

Under Finland's *Youth Act*, the national government is required to develop a policy framework for young people every four years, and to monitor and evaluate progress towards the goals of the policy. In 2011, the Finnish government published its second Children and Youth Policy Program document, covering the period from 2012 to 2016.[108] It sets nine strategic goals, based on three themes:

- ensuring the participation of every child and youth, beginning with hobbies and activities and proceeding through a "social guarantee" for young people under 25 of a job or educational or training opportunity within three months of becoming unemployed;
- achieving non-discrimination and improving young people's growth and living conditions, including addressing discrimination through affirmative action;
- everyday life management, supporting the child or young person in becoming capable of taking responsibility for his or her life, personal finances and emotional well-being, considering his or her development stage. The program emphasizes the role of parents and families in developing these capacities, with educators.

Although there is a separate development plan for education and research, the plans are developed together, and the Ministry of Education and Culture has the largest number of defined responsibilities for implementing the program.

European Union Youth Strategy

The EU's Youth Strategy (2010–2018) seeks to promote better educational and job opportunities for young people, as well as active citizenship, social inclusion, and solidarity.[109]

A list of EU youth indicators was also developed by an expert group. These indicators range from basic demographic information (ratio of youth to total population) to established education, health, and social inclusion measures (school leavers, PISA achievement,

obesity, smoking) to emerging measures for key areas such as creativity and culture, participation in democratic and voluntary activities, and orientation towards global issues.[110] These data — along with information about European youth policy — are available from Eurostat, the European statistical agency, or from the youth area on the Directorate-General for Education and Culture's website.[111]

Education in a larger framework

In this paper, we have emphasized the importance of building goals for schooling — and measures of progress — that fit within a broader framework for what we want for children and youth. This approach is critical to ensure that our expectations of schools are framed within the broader context of social investment in youth and childhood: school will never be a silver bullet if supports from families, communities, and governments are not there to provide a broader set of opportunities for young people.

We have also emphasized the importance of looking at education not only for how it contributes to children's individual development but also for how it contributes to the wider the social good. This wider view includes how education contributes to prosperity and human capital by ensuring students are ready to work in a rapidly changing economy. It also includes how education contributes to society in the more complex ways measured by instruments such as the Canadian Index of Well-being, which looks at aspects of quality of life such as community vitality, democratic engagement, and the environment.[112]

Conclusion: Now what? So what?

This paper has identified the pervasive influence that measurement-based systems of accountability have had on our schools, and has identified a range of areas where there is little public focus on the work that schools do, despite the importance of this work for students and for society. Going back to the original purposes of public schooling, or looking forward to learning for an unknown future, it is clear that schools have a broad social role. For schools to perform these roles as well as possible — and to learn from the successes that are taking place today — it is important to foster public dialogue about what we want

our schools to be doing and about how we can know if what we envision is actually occurring, or at least if progress is being made.

There is clear evidence that what schools do can make a big difference in supporting the strengths we want to develop in every child. There is also a growing knowledge base about how schools can make a positive difference in helping foster these strengths, and the resources educators need to achieve these interconnected goals. This review has shown that we already have ways to measure the qualities we care about, that is, tools to understand how well schools are supporting students in the many dimensions of learning and experience that are critical for our society.

To start the discussion, we have suggested potentially important dimensions of learning that might be represented in a more comprehensive account of the success of schools: academic achievement, physical and mental health, social-emotional development, creativity and innovation, and democracy and citizenship. For each of these dimensions, we have shown that there are existing ways to measuring what is going on in schools. Another approach is to look not at student outcomes but at the processes, resources, and opportunities that are part of a successful school, by examining issues such as school climate and essential supports for learning.

Developing shared social understandings is a key element of any measure of success — buy-in is required from the public and education professionals. One of the basic criteria for any measure of success is that it be useful for schools in their efforts to get better.[113] Measurement alone will not ensure school improvement; curriculum and instruction must be in place to prepare students — and their schools — for success at what is being measured. Educators need to have the resources (time, capacity) to work with the results of these assessments and develop contextualized strategies for making use of them. It is also critical to find ways to limit misuse of public data through things like school rankings, real estate reports, or simplistic media stories. These critical practical questions, however, do not take away from the importance of ensuring that our schools focus on what counts,

and that best efforts are dedicated to identifying appropriate role of schools — alongside families and communities — in supporting the full range of students' development.

When we ask questions about what a good school is, or how a school is doing, we want answers that help us understand how it makes a difference for children — and for our society.

The research reviewed in this report provides the foundation for an informed discussion about developing a better measure of success. But research is not enough. We need public conversations to explore what are the right goals for our schools and, once we have established these goals, how will we be able to highlight progress towards them.

Canada is at a crossroads. Public concern about the direction our rapidly changing society is moving — and who is getting left behind — are growing. Questions about the role of education lie at the heart of these societal changes. We have a chance — and a responsibility — to more clearly articulate what kind of Canada we want to be and what kind of schools we want to have. There is in fact a political window right now (in particular in Ontario), with governments looking for new ideas to move education forward. People for Education and others with a concern for equity and broad societal goals need to be at the table influencing these discussions.

If you agree that the time is right to ask for an education system focused on what matters most for our children and for Canada, we are asking you to join the campaign (link) and be part of a conversation with us:

- What information would help you understand how your school is doing?
- Are the goals we have identified the most important ones for students and society? Are there missing?
- How do we share information from individual schools about progress towards these goals in a useful way?

People for Education will be hosting discussions online (link) and at conferences across the country. Join the campaign, and together let's build a better measure of school success.

Notes:

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[7] Sahlberg, P. (2011) *Finnish lessons: What can the world learn from educational change in Finland*. New York: Teachers College Press; see, e.g., Giddens, A. (1999). The third way: the renewal of social democracy. London: Wiley; Barber, M. (2007). *Instruction to deliver: Tony Blair, public services, and the challenge of achieving targets*. London: Politicos; Levin, B. (2008). *How to change 5000 schools: A practical and positive approach for leading change at every level*. Cambridge, MA: Harvard Educational Press; see also Hood, C. (1999). *Regulation inside government: Waste-watchers, quality police, and sleaze-busters*. Oxford: Oxford University Press; Power, M. (1997). *The Audit Society*. Oxford: Oxford University Press; Apple, M. W. (2005). Education, markets and an audit culture. *Critical Quarterly, 47*(1), 395-414.

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[10] Schleicher, A. (2007). Can competencies assessed by PISA be considered the fundamental school knowledge a 15-year old possess? *Journal of Educational Chage, 8*(4), 349-357, Ercikan see note 6.

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[15] In Ontario, see, for example, Volante, L. (2007). "Educational quality and accountability in Ontario: Past, present and future." *Canadian Journal of Educational Administration and Policy, 58* and OTF supra note 34.

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[95] The partnership is currently directed by a strategic council. More than half the members of the council are for-profit educational service or resource companies: Cable in the Classroom, Lego Education, Goddard Systems Inc (a for-profit early childhood education provider), Follet School and Library Group, Education Networks of America, Cengage Learning, EF Education, Pearson, and VIF International Education. Other partners include the National Education Association, the College Board's AP program, the Project Management Institute's Educational Foundation, and several large corporations with a less direct financial interest in their work: Apple, Ford, Disney.

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[102] The committee excluded certain skills and competencies that were included in their major source documents, including life and career skills, local and global citizenship, social and cultural competencies, study skills and contextual skills, and nonverbal communication and intercultural sensitivity. "These particular skill constructs were excluded because they did not align well with any of the main factors in the research-based taxonomies of human skills and abilities, rather than because of any judgment they were less valuable for later life outcomes." pp. 2–15.

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