

**Secondary School Reform in Ontario
and the Role of
Research, Evaluation and Indicator Data**

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Introduction

In 2003, the Ontario Government introduced the first component of a three-phase, \$1.3 billion¹ Student Success / Learning to 18 strategy. The goal of the strategy, encompassing grades 7 to 12, is to increase high school graduation rates and to have youth engaged in structured learning until age 18 or until graduation.

This paper discusses the critical, and planned, role that research, evaluation and key indicator data have played in the strategy. It describes how external research and evaluation have helped shape the focus and elements of the strategy, and the effect that key indicator data have had on the engagement of educators and policy makers in “owning the problem” in constructive ways. As well, this paper will describe some of the barriers that have been encountered to the effective use of research, evaluation and data. It will conclude with a reflection on directions for future research, evaluation and use of indicator data to inform the Student Success strategy.

The Student Success / Learning to 18 strategy is motivated by a belief that every student deserves a good outcome from his or her education, that the outcome should be the best fit possible for each student’s potential, willingness and capacity for further learning, and that all students should have a core of common knowledge, skills and values. The strategy is not only about “closing the gap” between youth who complete high school and those who do not; it is also about “raising the bar” for all secondary school students.

The Student Success strategy gets its bearings from a set of principles that apply to Ontario’s approach to education change in general. These principles are:

- a strong focus everywhere on success for students – “success” meaning more than just test results or short-term achievement measures,
- effective team leadership in schools, boards and the Ministry,
- respect for diverse views among the parties, and a commitment to resolving differences through dialogue,
- an approach to policy and practice that is based on research and evidence,
- building on and sharing the many excellent practices and ideas in Ontario schools,
- respect for professional skills, and giving people flexibility in the routes they choose to achieve goals,
- investment in building capacity at all levels and among all parties,
- seeing students, parents and the broader community as vital partners in the work of education, (and)
- additional resources targeted to meeting key objectives (Levin, 2007).

Within this framework, the Ministry has consciously nurtured the system-wide practice of using research, evaluation and indicator data, both internally and in collaboration with education stakeholders, and has invited all stakeholders to take part in problem-solving and informed debate with the shared goal of improving student outcomes.

¹ All monetary figures are in Canadian dollars (\$1 US = \$1.175 CND)

The Context

Ontario is Canada's most populous province, containing 12.7 M of Canada's 32.6 M people.² Ontario covers an area of over 415,000 square miles, an area greater than the size of France and Spain combined.³ The province is characterized by its large urban centers in the South located beside or close to the Great Lakes, surrounded by rural, agricultural areas and by increasingly less populated areas as one heads north as far as Hudson Bay.

Ontario's economic trend away from its traditional industrial and resource-based sectors has created a demand for increasingly sophisticated workers with strong fundamental skills and, increasingly, with post-secondary education or training.

Public elementary and secondary education is a provincial responsibility in Canada's federated system of governance. There is no national education Ministry. Ontario's publicly funded education system has over two millions students (1.4 M elementary and 0.7 M secondary) in over 5,000 schools (4,002 elementary and 884 secondary).⁴ The schools are administered through 72 school boards, and 33 school authorities which serve remote or distinct communities. The following are key features of the education system:

Public/Catholic: The province provides educational services through both public and Catholic schools and school boards.

French/English: Students in Ontario have an entitlement to education in either of Canada's two official languages, English and French; accordingly Ontario provides educational services in both languages through English-language and French-language schools and district school boards. Thus, students may attend an English-language public school, an English-language Catholic school, a French-language public school, or a French-language Catholic school.

Teachers: Ontario school boards employ some 114,200 teachers, 72,200 elementary and 42,000 secondary.

Budget: Funding for public education in Ontario 2007-08 is approximately \$18.3 billion. Funding has been increased by more than 17% (\$3.5 B) since 2003. Education is second only to health in its share of the Ontario budget.

Curriculum: Ontario's publicly funded education system uses a common curriculum

² Statistics Canada, Populations by Year, Province and Territory retrieved March 25, 2007 at <http://www40.statcan.ca/101/cst01/demo02a.htm?sdi=population>

³ Government of Ontario, About Ontario, retrieved March 25, 2007, at http://www.gov.on.ca/ont/portal/!ut/p.cmd/cs/.ce/7_0_A/.s/7_0_252/.s.7_0_A/7_0_252/_1/en?docid=EC001032

⁴ Ontario Ministry of Education, Education Facts, retrieved March 25, 2007 at <http://www.edu.gov.on.ca/eng/educationFacts.html>

from kindergarten through grade 12, and defines what children are taught in Ontario public schools. They detail the knowledge and skills that students are expected to develop in each subject at each grade level. By defining the curriculum for use by all Ontario teachers, the Ministry sets standards for the entire province.

Roles and Responsibilities: Ontario's education system is organized on three levels, within which the Ministry of Education, school boards, and schools, form the nucleus of the system. Two additional government agencies are in place to measure the effectiveness of the education system (the Education Quality and Accountability Office, the provincial testing agency), and to administer self-regulation of the teaching profession (the Ontario College of Teachers).

Geographical: educational services are provided over a substantial geographical area; schools and school boards in urban, rural and remote communities have distinct needs, and face unique challenges.

Multicultural: Ontario enjoys one of the most diverse multicultural populations in the world, particularly centred in the province's urban areas; the school system plays a critical role within the province's network of services for newcomers, with a large annual influx of English Language Learners.

Roots of Education Reform

Like many other jurisdictions around the world, Ontario embarked on major educational reforms during the last decade of the 20th century. These have continued to the present time. Key elements of the early reforms were consistent with what has commonly come to be called "standards-based reform".

Ontario introduced a common curriculum for the provincially publicly-funded school system, which extends from kindergarten through secondary school. The curriculum contained specific expectations for each subject and grade. The government also established provincial standards for student performance, and created an arm's length agency to carry out province-wide testing and report on whether these standards were being met.

A reform unique to Ontario was the shortening of the secondary program from five years to four years, comprising grades 9 to 12. The reform also included a grade 10 literacy test, which students would have to pass in order to graduate, and a required 40 hours of community volunteering activities. The cohort entering high school in 1999-2000 would be the first class graduating from the four-year program. It would also be the first secondary school class to receive the new Ontario curriculum each year. The 2002-03 school year saw the graduation of a double cohort of students, the last year of the five-year program and the first year of the four-year program. The second class under the four-year program (2000-01) was the first class which also had to successfully complete the Grade 10 Literacy Test as a graduation requirement.

The focus on standards extended to the teaching profession as well. The government of the day introduced requirements for teachers' compulsory professional development. In addition, new teachers—including those who had graduated from Ontario Faculties of Education—were required to successfully complete a qualifying test before being approved to teach in Ontario schools.

The breadth and depth of these changes gave rise to considerable discord within the education system, especially between teachers' unions and the government. As acrimony increased, the public grew increasingly disenchanted.

In the 2003 election, the Liberal Party defeated the Conservative government winning on a platform within which education was the centrepiece – alongside healthcare and economic growth. So central was education to the Premier that he commented in a public address that he hoped to be remembered as the “Education Premier”.

At the heart of the education platform were three key pledges: that 75% of students, by age 12 (grade 6), would be performing at or above the provincial standard in reading, writing and mathematics by 2008, as measured by provincial testing; that class sizes would be reduced to a maximum of 20 students per class for grades K to 3; and that high school dropout rates would be decreased, and graduation rates increased.

Identification of the Problem

The Ontario Ministry of Education commissioned Dr. Alan King to conduct a longitudinal study on the impact of the change from the five-year high school program to the four-year program beginning in 2000 and continuing to 2005. It was designed to meet the very practical need for a forecast of the impact of the double cohort on applications to post-secondary institutions in 2004, and to assess the impact of the redesigned secondary system on graduation rates in subsequent years.

As part of his Double Cohort Study, King calculated both four- and five-year graduation rates for the first cohort of the four-year program. He concluded that only 57% graduated in four years, with an additional 13% of the cohort graduating in five years, resulting in a combined 70% graduation rate (King, 2005, p. iii). Subsequent Ministry of Education measurements, using a cohort method with slight differences from King's, set the five-year graduation rate for this cohort at 68%.

King also pointed to the early warning signs of high school failure. He examined the experiences of four cohorts of students under the new system and found that,

enrolments in particular courses or a single failure in any course dramatically reduces the likelihood of a student graduating in four years. For example, only 14.6 percent of students from the first cohort who took any Locally Developed

Compulsory Credit courses⁵ in grade 9 completed 30 credits in four years; only 3.2 percent of students from the first cohort who had failed Grade 9 Applied English or Mathematics completed 30⁶ credits in four years; and only 15.8 percent of students from the first cohort who had failed one Grade 9 course completed 30 credits in four years (King, 2005, p. x).

Students failing to accumulate credits at a pace leading to 30 or more credits by grade 12 were at risk of dropping out. It was therefore with alarm that the government learned after its first year in office that 27% of its grade 9 students and 40% of its grade 10 students were already at risk of not graduating, because they had already missed at least one credit (Ontario Ministry of Education, 2005a, pp 5 - 6).

Finally, King's study also pointed to a pattern of apparent inequities within the education system. Examining patterns of marks or grade distributions he detected three signs that the system was not working in the best educational interests of some students. He found abnormally high failure rates, a large percentage of failing marks raised to 50%,⁷ and a skew overall in marks distribution toward low marks for students in applied and workplace English courses under the new curriculum. By contrast, the marks of students in university-bound English courses were more evenly distributed, and skewed toward higher marks. In mathematics, marks were more similar in their distribution among the types of courses, but there was a very marked rate of failure and percentage of marks raised to 50% in the grade 9 applied math course. While over the course of four cohorts of students from 2000-2001 to 2003-04 mathematics failure rates declined and marks increased gradually, King reported that even for students of academic math in grade 10 almost 40% received final marks of 60% or less in the last cohort he examined. (King, 2005, pp. 32-44). King asked: "Is it educationally sound to make a "required" subject such a high-risk experience for students?" (King, 2005, p. 40)

For the "Education Premier" the sum of these results represented a significant motivation for reform. The education system was therefore challenged to support struggling students and remove barriers to their success, while at the same time maintaining high standards. King recommended that "(i)n order to improve the likelihood of graduation for students at risk: (1) remediation must begin during the first semester of Grade 9; (2) opportunities for credit recovery should be made available; and, (3) most importantly, courses should

⁵ This and the following passages refer to three categories of secondary school courses: academic, applied and locally developed compulsory courses. Students pursuing academic courses are generally thought to be destined for post-secondary studies at a university. Those pursuing applied, are generally thought to be destined for post-secondary studies at a college or in an apprenticeship program. (The term "college" in Ontario refers to career-oriented post-secondary institutions. They issue diplomas and certificates, unlike universities which issue degrees, e.g., BA, BSc and graduate degrees.) And those pursuing locally developed compulsory credit courses are generally thought to be destined for the workplace after high school. Locally developed compulsory credits are courses designed by boards and approved by the Ministry "to accommodate educational and/or career preparation needs of students in a particular school or region." (Ministry of Education, 1999, p. 43)

⁶ Students in Ontario must acquire 30 credits in a mix of compulsory and elective courses to graduate from high school.

⁷ A mark of 50% out of 100 is the lowest possible passing grade in Ontario's secondary schools.

be more closely tailored to students' abilities and aspirations." (King, 2005, p. x)

The Student Success strategy, which will be described more fully below, noticeably features elements responding to all three of King's recommendations, including a broadening of the array of credit-bearing offerings, such as experiential learning opportunities, and an opportunity to recover credits and meet graduation requirements. The strategy also features a change in culture, through which teachers and administrators examine student indicator data and become conscious of students' progress in accumulating credits, and become more fully engaged in, and accountable for, the success of every student.

The new government recognized that it was no longer acceptable, in a knowledge-based economy, to allow students to stop participating in structured and purposeful learning activities at the age of 16. Research clearly supported both individual and personal reasons, and economic and social reasons, for ensuring that students receive the support they need to complete a high school diploma. For example:

Estimates of the net present value of private income associated with high school completion are ... substantial. The net present value of income (i.e., using a 3% discount rate) for male graduates over the lifetime is \$138,000 relative to those that leave school at Grade 9, while it is \$121,000 for female graduates relative to those that leave at Grade 10. (...)

The total monetary rates of return for high school completion ... are also considerable. For example, when comparing graduates to those that dropped out at Grade 10, the total monetary rate of return is 17 percent. From a societal standpoint, these findings support the case to lower the dropout rate in Canada" (Gingras and Bowlby, 2000, p.39).

A one-year increase in schooling lowers the probability of reporting being in poor health by 3.7 percentage points, and raises the chances of reporting being in good health by 8.2 percentage points. Additional schooling reduces the chances of having a work restricting disability, which includes depression. (Oreopoulos, 2005, p.17).

The government's commitment was to create "a meaningful high school diploma program that combines academic achievement and work preparation for students in danger of dropping out." (*Excellence for All*, n.d., p.10). It went on to commit to introducing legislation that would "make learning mandatory to age 18". Mandatory learning to age 18 meant that all young people continue their education, either in school or in an approved out-of-school training experience, until they reach 18 years or until they graduate.

Defining Student Success Indicators

A demand for evidence motivates improvements in data collection, management, and interpretation, and supports a sense of responsibility for student success. In the Ontario context, a means was needed to ensure that leaders in the system would come to “own” the problem and, therefore, connect with educators’ predilection to help students and to act upon it with a sense of determination and focus.

The introduction of Student Success indicators served this purpose. Developed by a committee of school board representatives and Ministry staff, the indicators were inspired in large part by King’s insights. There were indicators to measure student progress and achievement, and indicators to determine whether students were making use of course offerings thought to be more appealing to non-university bound students, such as co-op and workplace-oriented courses. There were also indicators to measure retention of students in the French-language system, a goal to which the Ministry is committed. The original eleven indicators are listed in Table 1 below. Eventually, in 2005, a twelfth indicator—marks distribution—would be added to the list as a check on equity within the system.

INDICATOR	
1.	Credit accumulation
2.	Pass rates in compulsory courses
3.	Completion of the literacy graduation requirement
4.	Workplace preparation course selections
5.	College preparation course selections
6.	Locally-developed compulsory credit course selections
7.	Guidance and career education; “co-op related” courses
8.	Annual school leaver rate
9.	Grade 7 and 8 students at risk
<i>PLUS THE FOLLOWING TWO ADDITIONAL INDICATORS FOR FRENCH-LANGUAGE BOARDS</i>	
10.	Grades 7 and 12 francophone students leaving to go to English language schools
11.	Grades 7 and 12 francophone at-risk students leaving to go to English language schools

Table 1: Original Student Success Indicators

A number of challenges have been encountered in using these indicators. The first challenge relates to definitions. The Ministry has promulgated definitions for each of the indicators, and some efforts have been taken to ensure the consistent application of these definitions. The definition of some indicators is more prone to reinterpretation than others. The term “at risk” is particularly open to having meanings added to its official definition. The Ministry defined it as the number and percentage of grade 7 and 8 students working at or below Level 1⁸ in a majority of strands⁹ in English or French and/or Math. Nevertheless, a recent survey of Ontario English-language teachers found their view of “at risk” had a variety of additional attributes: persistent truancy (90%),

⁸ The Ontario curriculum describes levels of proficiency using a four-level scale, with four being most proficient and one being least.

⁹ Subjects in the Ontario curriculum are composed of strands. For example, elementary school mathematics has five strands: number sense and numeration, geometry, patterning and algebra, measurement, and data management and probability.

behavioural concerns (83%), suspensions (50%), recommendations from elementary school (37%), and late attendance (28%) (Mueller, forthcoming). From a pragmatic standpoint, this loose practice has not to date created great concern in the Ministry, as boards are categorizing students for the purpose of providing extra supports, and the number of students identified is generally decreasing.

The case of the indicators related to course selections (# 4-7 above) shines light on a different kind of challenge. The measurement of these indicators has faced both technical barriers and the business rule barriers. The technical barrier has been that school boards' and schools' student information systems differed in their capability to construct a true count of students who have enrolled in and completed these courses. The business rule barrier has been that the codes designating these courses are inconsistently applied between schools and boards, in part, because the introduction of new types of courses has outpaced the updating of the course code classification in board systems. This has caused the Ministry to lack confidence in the accuracy and completeness of the information related to these indicators.

The Student Success indicators from school boards related to performance (#1, 2, 3 and 8 above), at-risk students (#9) and attrition from the French-language system (#10 and 11) are the subject of special collections received, stored and analyzed directly by the Ministry's Student Success staff. Analysis is limited to descriptive statements about the status of each indicator and year over year trends at the provincial level, because these data are provided to the Ministry already aggregated to the school board level. This prevents closer analysis by school and sub-populations.

Also, noticeably absent from the indicators above is a measure of boards' graduation rates. There were three reasons that the Ministry did not collect graduation data from boards. First, not all boards had information systems capable of reliably producing such information. Second, those boards that did report locally on graduation rates tended to use an event rate, which calculates the percentage graduating by using the number of students at the beginning of grade 12 as the denominator and those completing grade 12 as the numerator, while ignoring any students who may have left school in grades 9 through 11. Furthermore, the event rate for a board does not account for students who left a particular board, but later graduated in Ontario in another school board. Third, in light of the preceding, if the Ministry was going to report publicly on graduation rates, then this would have to be done at the provincial level.

At the time of the King study, Ministry of Education data sources on secondary students were weak. Data sets were incomplete and accuracy was often questionable. To overcome these hurdles, King conducted extensive data cleansing and refinement procedures to create a sample robust enough to support his investigation. Efforts by the Ministry to report on graduation rates using a cohort measure, drawing upon essentially the same data sources as King, met the same data quality hurdles. Two essential elements were needed to create a truly comprehensive cohort measure: good data to start with and a provincial system of unique student identifiers.

These data and systems challenges were a key motivator leading to the overhauling Ontario's student information system. The new Ontario Student Information System (OnSIS)¹⁰ is expected to have its first data sets available in the summer of 2007. OnSIS will contain individual student records as did the predecessor system. A provincial system for issuing unique numeric identifiers for Ontario's students began in 2002.

The final element required to support data analysis and reporting on the complete educational pathways and tendencies of individuals, subpopulations, and schools was good data. Three factors would appear to be having an impact on attention to data quality at the board level: 1.) the very collection of Student Success indicators within boards 2.) the public reporting of secondary school results, and 3.) Ministry supports to boards to build capacity for data collection, management and interpretation.

Even though analysis of Student Success indicator data is limited at the provincial level, the act of collecting data within school boards to report to the Ministry puts in motion a set of internal demands and accountabilities with their own dynamic. Board leaders request the data from school leaders, and must examine and approve it before sending it to the Ministry. If the data received do not bode well for a school or for the board overall, it can trigger a round of questioning: Are the data right? Why are they so? and, What are we doing about it to get better results?

Fuelling this dynamic, the Ministry began publishing some of the board results on secondary student progress on its public website.¹¹ It reported on the percentage of students who had achieved the 16 credits expected by the end of grade 10. As well, it reported on the percentage of students who had passed the grade 10 Literacy test, which is one way students can meet the high school literacy requirement.¹² Public reporting of student progress has the effect of further heightening school boards' sense of accountability. Students, parents and the community also ask why the results aren't better. Such questions often give rise to two different reactions: either defensiveness¹³ or

¹⁰ OnSIS collects descriptive data on district, board and school administration, student school enrolment for elementary and secondary panels, secondary course marks, credits, and diploma data. **Elemental level data on students is available for the 05-06 school year. Educator data is being collected through OnSIS for the first time during the 06-07 school year.** The Ministry collects data on a predetermined count date. There are three major collections throughout the year-fall, winter and summer. This data can be linked with pre-OnSIS data where the related student data is available in our existing data holdings as reported by boards.

¹¹ See <http://www.edu.gov.on.ca/eng/bpr/>

¹² Ontario students must meet a literacy requirement to graduate. They take a test administered by Ontario's arms-length testing agency in grade 10. Students who fail the test can take the Ontario Secondary School Education Literacy course. If one passes the course, then the graduation requirement has been met. The Student Success indicator, "completion of the literacy graduation requirement," counts *both* the percentage of students who pass the test and who pass the course. A communications dilemma is posed for the Ministry. Because testing agency publishes the pass rates for literacy test, the Ministry must decide whether to publish the same measure as the testing agency, and therefore ensure consistency, or whether to publish the Student Success indicator, which risks confusion and the appearance of inconsistent reporting. So far the Ministry has sided with consistency in reporting between it and the testing agency.

¹³ This defensiveness is sometimes manifested as helplessness, regrettably, supported by research. That is, drawing upon studies showing the amount of students' outcomes explained by socio-economic status, educators sometimes point to such findings to explain their students' performance and their own inability to

a response that invites further inquiry, seeking good explanations of the results and more information about causes in order to guide decisions about how to improve. School leaders, in turn, are being encouraged to turn to their colleagues to pose the same questions in a problem-solving spirit and aimed at achieving better student results.

This emerging culture of inquiry increases the value placed on clean, accurate data. Education stakeholders want to have confidence in the evidence used to support explanations and arguments for new directions.¹⁴

There is evidence that this culture of inquiry is present in interactions between school board leaders and school leaders. For example, some superintendents responsible for a number of high schools have the Student Success indicator data displayed on their office walls for each of the high schools in their portfolio. They use the information to track progress, to form the basis of superintendent-principal discussions and to consider when allocating resources and programming. Examining this data, questions naturally arise. For instance, one board noticed that its pass rates in compulsory courses were higher than one would have predicted based on the percentage of the same students who have missed credits. This observation led to inquiring about which courses students were failing. Board leaders were surprised to learn that the courses students were failing most were in music, drama and art.

In turn, in several high schools that are drawing students from a number of elementary schools are beginning to track students moving up from the various elementary schools to high school who have been identified as at risk. The usage of data within schools is aimed at having teachers advise and mentor students identified as at risk and to spot and respond in a timely manner to students who are missing credits.

The efforts of boards to prepare their data to meet the standards set by OnSIS can pay back dividends to boards and schools as they turn to that data to learn about their students and the effect of the schools' efforts. The degree to which such practices are embedded in schools and boards is not known to the Ministry in any systematic way as the practices described above have only been observed informally. Even less is known about the practices of classroom teachers. How the Student Success strategy is influencing practices at the school and classroom level will be a focus of a major evaluation discussed later in this paper.

make a difference.

¹⁴ During the past two years, the Ministry has been explicitly supporting the growth of school board capacity in data collection, management and use through its Managing Information for Student Achievement (MISA) initiative. This initiative is discussed more fully in a companion paper to this one.

Ontario's Student Success Strategy

The Student Success Strategy has been undertaken in three phases as follows:

- Phase One: Investment in leadership capacity for secondary school reforms at the school board level (2003-2004)
- Phase Two: Investment in leadership capacity at the school level (2004-2006)
- Phase Three: Provision of new and varied learning opportunities for students (2006 to the present).

Each successive phase builds capacity internal to school boards—beginning with board leadership, moving to the school level and ultimately aiming to arrive at the learning environments where instruction and learning are to take place. Notably, increasing secondary school educators' reflection on school- and student-level data, in particular, is seen as a conscious element within the strategy designed to impact teaching and learning. This awareness creates a sense of ownership for students' success among high school teachers, as well as a greater awareness of students' diverse learning needs and styles. It also supports a shift away from teaching "subjects" to teaching "students".

The key elements of each phase are described below, as are the research projects and data analyses that either informed and/or coincided with them.

Student Success Strategy Phase I: Capacity Building at the Board Leadership Level

The defining characteristic of Phase I was a \$51 M investment to create a Student Success Leader (SSL) position with senior management rank in every school board to support a focus on success for all secondary school students. The SSLs, in addition to reporting on the board's indicators, were to develop Action Plans informed by those indicators. The Action Plans were to be structured around what were called the four themes within the Student Success strategy: increasing literacy learning; increasing numeracy learning; creating pathways to post-secondary destinations, and creating within schools a sense of community, culture and caring supportive of student engagement. Professional development was organized by the Ministry in the form of provincial symposia for all SSLs in order to encourage a consistency of approach and strength of purpose among them.

Beginning in the 2004-05 school year the Ministry funded 105 pilot projects across the province (called Lighthouse projects) aimed at learning lessons to apply on a larger scale. The \$18 M investment was to be one-time funding, not on-going funding. These projects focused on helping students recover failed credits, provided programs in alternative settings, attended to the targeted student populations (such as Aboriginal students) and attracted early school leavers to return to the system. Exploration also began in the offering of dual credits—credits earned at colleges that would count both for college and for high school credits. During this same time period, the Ministry promoted greater use of co-op placements and better means to recognize and represent students' knowledge

and skills to future employers.

Meanwhile, further Ministry-sponsored research was pointing to the need for more focused practices to engage struggling students. This would be the centrepiece of phase two.

Risk and Protective Factors Affecting Youth

In the spring of 2004, equipped with the insights emerging from Dr. King's research, the Ministry of Education commissioned the Hospital for Sick Children in Toronto to lead a consortium of investigators in studying early leavers from high school, focusing on those factors that contribute to students leaving school early and those that contribute to keeping them in school. Dr. Bruce Ferguson was the Principal Investigator.

The largely qualitative study involved 193 interviews with youth who had left school early or who were at risk of leaving school. Those interviewed included Aboriginal, Francophone, immigrant, visible minority, lesbian/gay/bisexual/transgendered, and rural youth. In addition, 15 focus groups of parents and teachers were held.

Ferguson's main finding was that young people struggling with a multitude of risk factors are at the same time determined to make better lives for themselves. The major contributors to students leaving school were the disconnection and disengagement with the school culture and school community, rather than their personal and family circumstances, as one might have suspected. Virtually all of the youth included in the study had plans to return to school in the future. "Kids need to feel the system cares about them. We need to pay attention so they know they are valuable" he concluded (Ferguson, 2005a) A key recommendation was that every student that was "at risk" of not succeeding in school needed to be paired with a caring adult—teacher, guidance counsellor, or administrator—who would personally work with and provide advice to the individual student. (Ferguson, 2005b, p. 48 - 49).

The challenge for system leaders was clear: to "institutionalize" the connection between a caring adult in the school and those students who are struggling in a variety of ways, and across a variety of dimensions, academically, socially and otherwise. At the same time, it became clear that the early warning signals of possible failure to graduate can be accurately read, and that school, school board and provincial education leaders needed the capacity to read them.

Student Success Strategy Phase II: School-Level Capacity Building, Early Results, and Changing Practices

Phase two aimed to increase capacity at the school level to attend to struggling students, and ensure follow-through on the recommendations emerging from the Early Leavers study. This required dedicated personnel in schools. In 2004-05, the Ministry invested \$89 M in support of 1,300 additional high school teachers, with 800 new or designated Student Success Teachers (SST). An additional 300 teachers would be added in 2006-07 and 300 more committed for 2007-08. The aim was to have on average one SST per high

school in the 2007-08 school year.

In a broader context, these additional teachers were a pivotal matter in negotiating a province-wide, four-year labour agreement with the Ontario Secondary School Teachers' Federation. The union was seeking an agreement whereby teachers would only teach 6 out of 8 class periods. The additional SSTs made this feasible. Initially, SSTs could be utilized as full-time classroom teachers, but eventually they were expected to be released at least half time from classroom duties so that connections with struggling students could occur in a variety of settings. As with the establishment of Student Success Leaders at the board level, the introduction of SSTs has been accompanied by Ministry-supported professional development.¹⁵

This period also saw the continuation or expansion of 99 Lighthouse projects and the addition of 26 new projects. Meanwhile, Ministry support of board level Student Success Leaders and the Action Planning function continued.

During Phase II, analysis of the Student Success indicators and reports from the Lighthouse projects indicated that some progress was being made in helping more students stay on track to graduate.¹⁶ Highlights included:

- A small increase (1%) from 2003-04 to 2004-05 in the percentage of grade 9 students who had collected the appropriate number of credits to be on track for graduation
- Increased pass rates in grade 9 compulsory courses designated academic (up 1%), applied (up 3%) and locally developed compulsory courses (up 3%)
- Increased pass rates in grade 10 compulsory courses designated academic (up 1%), applied (up 2%) and locally developed compulsory courses (up 4%)
- A considerable increase in the percentage of students meeting the Ontario literacy requirement by grade 12: up 8 percentage points from 82% in 2003-04 to 90% in 2004-05
- A high success rate in recovering credits through Lighthouse projects, with students involved in the 2004-05 projects attempting 17,478 credits and achieving 15,342, for an 88% success rate
- A slight decrease in the percentage of students identified as “at risk” in grade 8 over the two year period (less than 1%)
- An increase in the graduation rate from 68% in 2003-04 to 71% in 2004-05.

¹⁵ It is notable that the Student Success strategy differs from Ontario's approach to capacity building for change at the elementary school level. Both the secondary and elementary initiatives have invested in professional development for board, school leaders and classroom teachers. The Student Success strategy, however, has created permanent positions within school boards with responsibility for the initiative. By contrast, the elementary initiative has invested significantly hiring in expertise to the Ministry to, in turn, provide support to boards. Exploration of the merits of each model would be an interesting research question.

¹⁶ Here and elsewhere in this paper, statistics are quoted from sources that are unpublished, internal Ministry reports. The information contained in these reports has been important in shaping the Ministry's understanding of what is working and whether progress is being made, and therefore their appearance here is important to telling the story of the Student Success strategy. As information collection and management practices evolve, and a collective interest in **education** system data increases, public reporting practices and access to data can be expected to evolve as well.

Refinements were also being introduced to the collection of data. For example, 2005-06 was the school year for which the Ministry sought information from boards about the distribution of marks.

The improvements observed—some slight and some substantial—drove efforts to put in place more effective practices to support struggling students.

Student Success Strategy Phase III: Student Focus, Transitions and Accountability

In December 2005, the Government of Ontario announced phase three of the strategy. The centrepiece of this phase was the establishment of a graduation rate target. A target was set to have 85% of students in a cohort graduate within five years of beginning high school by the 2010-11 school year. The Government also introduced legislation in December 2005 to require students to keep learning in a classroom or workplace training program, including apprenticeship, until age 18 or until they graduate. The Bill also provided the legal recognition of the increased range of learning opportunities to meet the needs of students and increased the school leaving age from 16 to 18 (or graduation).

Revisions to secondary school diploma requirements responded to the call for more experiential learning opportunities and their recognition in meeting compulsory credits.¹⁷ One compulsory credit could now be earned by passing workplace preparation and learning skills courses and two could be earned through cooperative education courses (Ontario Ministry of Education, 2006). Also, notably, the 2005-2006 school year opened with a newly revised mathematics curriculum intended to redress some of the issues made apparent by King's analysis¹⁸ (Ontario Ministry of Education, 2005c). More supports to struggling students were being implemented within boards and schools.

A number of additional factors combined to give this phase its student-focused character. Student Success Leaders were in place, Student Success Teachers were coming on board and, within schools, School Student Success Teams were being formed. The Teams are

¹⁷ Major program enhancements in 2005-06 were designed to provide new learning pathways to support increased student achievement included:

- A new Specialist High-Skills Major within the Ontario Secondary School Diploma (OSSD) that will allow students to complete a minimum bundle of courses in specific high-skills areas of concentration that lead to employment sectors, apprenticeships and post-secondary destinations
- Expanded cooperative education programs provided in partnership with business and community organizations. To broaden the recognition of experiential learning, students were able to choose up to two co-operative education credits and one career education or learning strategies credit toward their 18 compulsory credits.
- Dual credit programs designed to enable high school students to earn credits by participating in apprenticeship training and postsecondary courses that would count towards their OSSD and postsecondary diploma or degree. The new style of learning proved successful in School-College Work Initiative projects which were piloted across the province.
- Coordinated efforts to build formal links between high schools and postsecondary destinations to help students reach higher goals.

¹⁸ See p. 5 above for the King analysis

composed, at minimum, of the SST, Principals, the Special Education teacher, Guidance teacher and any other teachers or school staff thought to be helpful to implementing the strategy in the schools.

At the same time, the collection of information about struggling students as they were about to move to high school raised questions of how best to manage coordination between the two school levels. Educators were operating with the knowledge that research findings and experiences suggested that the transition from grade 8 to secondary school is particularly consequential. As described above, King pointed out that students with a heightened risk of dropping out can be identified in grade 9 by observing which ones fail to accumulate eight credits that year. Moreover, educators and researchers in the area of special education were reminding policy makers that *all* transitions are challenging.

During this period, Ministry policy makers also commissioned a literature review (Tilleczek and Ferguson, forthcoming) on grade 8 to high school transitions, recognizing the importance of identifying students in grade 8 who are at risk of not completing credits in grade 9. The information from this review has served two purposes: to inform practice at all levels of the education system, its findings being a topic at Ministry-sponsored professional development sessions in 2006-07, and to lay the groundwork for a more detailed study of transitions in Ontario schools described below.

A paradigm shift in thinking about classroom instruction to meet diverse students' needs was also being fuelled by the work of an expert panel struck to advise the government on instruction for students with special education needs (Ontario Ministry of Education, 2005b). While differentiated instruction and Universal Design were identified as effective responses in classrooms in which special needs students were integrated, these pedagogical approaches were speaking more broadly to educators and providing a research-informed conceptual framework to make sense of, and make manageable, the day-to-day challenges of the heterogeneous classroom. An important implication of these approaches is the need to transform the teaching culture in high schools from being subject-centered to student-centered.

The Ministry supported professional development and capacity building to facilitate transitions planning between elementary and high schools. Transitions teams were formed between the two school levels to support the communication of more detailed information about the students behind the "at risk" indicator numbers. This communication would prove essential to the students' successful pairing with caring adults at the high school as the adults would be helping students by providing information and advice. Many report that the interaction between elementary and secondary school personnel supported by the Student Success strategy is another driver of change in the culture of the Ontario education community.

During this period, more progress in keeping students on track toward high school graduation has been seen. Findings for 2005/06, the most recently reported school year, show the following:

All school boards

- The percentage of students at risk entering high schools is declining, in most cases, for the third year in a row
- Students acquiring 16 credits or more by the end of grade 10—that is, students on track with no failed credits—have increased from 61% to 66% between 2004-05 and 2005-06.

French language boards

- 77% of grade 10 students have acquired 16 credits or more, up from 69%
- Transfers from French language boards to English language boards is somewhat mixed, with a decline in transfers between grade 7 and 12, and a 0.3 % increase in transfers in grade 8 in 2005-06.

The graduation rate for 2005-06 was 73%, which indicates a continued upward trend toward the 85% graduation rate goal by the 2010-11 school year.

A number of innovative initiatives were contributing or beginning to contribute to student progress. Lighthouse projects continued to provide a means by which students could recover credits in previously failed courses. In 2005-06, 32,383 credits were attempted and 25,020 credits were achieved, for a 77% success rate.

The notion of credit recovery itself is an innovative practice in Ontario in that students who fail a course are no longer obliged to retake the entire course. Instead an assessment is conducted, and they are only required to meet the curriculum expectations that they were unable to achieve the first time they took the course. Because of the decreased time required many students can earn two credits in the time normally taken by one course, and catch up to the pace of acquiring credits needed to progress toward a diploma.

Experiential learning opportunities were also being piloted and launched. Among the new program enhancements was the use of dual credits—credits earned in a college or apprenticeship program that are counted both for high school credit and college credit or apprenticeship requirements. In the first half-year they were offered, 360 students were enrolled in dual credit programs, of which 86% successfully earned the credits. The first term of this school year saw 260 students enrolled, with approximately 85% of them successfully earning the credit. In the second term there are approximately 2,250 students. As well, 27 school boards piloted the Specialist High Skills Majors in which students take a mix of high school courses and industry courses or certifications related to five sectors of the economy: arts and culture, construction, hospitality, manufacturing, and the primary industries of agriculture, mining, forestry and landscaping. Finally, there was a 22% increase over the previous year in the number of credits students earned in co-operative education courses.

In 2005-06 there was also evidence of cultural change with respect to use of indicator data. Data were being used by the majority of school boards as a basis for the elements of their Action Plans. Ministry staff found that indicator data were used by boards as part of their planning activities in support of each of the four themes in the Student Success

strategy: literacy, numeracy, pathways, and community, culture and caring. Fifty out of 72 boards did so with respect to literacy activities; 45 of 72 did so for numeracy activities; 39 of 72 did for pathways activities and 36 did for community, culture and caring-related activities.

Meeting Implementation Challenges

The growing imperative within public policy making circles to consult research and data when making decisions or solving problems is having an influence on the nature of the dialogue and actions of stakeholders in regard to the Student Success strategy. Changes of the kind introduced through the Student Success strategy have not been without controversy. Two groupings of stakeholders have been organized to advise the Ministry; they are the Learning to 18 Working Table and the Student Success Commission.

The Learning to 18 Working Table is made up of a wide variety of over 30 stakeholder organizations representing school boards, school trustees, education professional associations, elementary and secondary teachers' unions, the college teachers' union, parent organizations, faculties of education, the teachers' regulatory body, the college sector, the Aboriginal and Métis communities, and the French-language community. The Working Table meets to receive updates on many aspects of the strategy, to engage in discussion and debate, and to provide advice to the Ministry on the strategy and its elements. In the course of their deliberations, more and more working table members are asking: What is the evidence behind a decision? Will a certain aspect of the initiative be evaluated? What data should be collected to determine whether or not something is working? The Ministry, in turn, is challenged to provide the evidence being requested, commit to doing research and evaluation, and collect indicators to monitor the effects of its policies and programs.

The Student Success Commission was established by the government in 2006 to provide advice to the Minister on implementation of the Student Success initiatives with a special focus on addressing labour issues. The 12 member body included representation from all levels of school board leadership and the four teacher federations. When the entire Commission is able to reach consensus on a practice or set of guidelines, this is seen as a powerful endorsement in the education system. Such consensus is critical, as many elements of the Student Success Strategy involve potential labour issues. The following are examples:

- Credit recovery, which allows a student to acquire two credits in the time period of one class, has been an issue for teachers' unions, who have questioned the integrity of such a credit
- Issues have arisen in regard to the time SST teachers, who are often teaching a full course load, are expected to devote to working with struggling students¹⁹

¹⁹ See <http://www.edu.gov.on.ca/eng/document/nr/06.06/memo0630.pdf> for the Commission's report on Student Success Teachers.

- The use of dual credits, which may involve teaching and assessment by a college instructor, have raised questions from the teachers' unions about the qualifications of college teachers to teach secondary school courses, and whether the courses can be seen as equivalent to high school credits since the instructional time appears to be considerably shorter than those required for high school course.

While in its first year, the Commission outlined the guiding principles for the implementation of credit recovery and provided guidance on the use of SST's time, specifically that SST's are to have .5 release time to engage struggling students outside of the regular classroom. In each of these areas the Commission has advised on data collection to monitor implementation. On dual credits, the Commission provided advice on data collection that informed an evaluation of the initiative as it was being piloted, before moving to province-wide implementation. (Desbiens, 2007) This year, debate has continued on dual credits and the Commission has played a key role in finding grounds for compromise among the parties.

Data relevant to the above issues can and has helped support compromise and the development of consensus. Increasingly, Ministry stakeholders are expecting the Ministry to provide or conduct research, collect data and carry out evaluations on the merits and effectiveness of its policies and programs.

Looking Toward the Future

In the year 2007-08 and beyond, we can expect two complementary trends to unfold.

The first arises out of educators' and policy makers' increased access to student level information. This information will increasingly draw attention not just to the overall trends in student achievement, which could already be seen at the board and provincial levels using aggregated data, but at the student level. In turn, this will allow researchers and policy analysts to understand the pathways that students and subpopulations of students are navigating, successfully or not as successfully, through high school and beyond. As well, for the first time, the Ministry will be able to view data aggregated to the school level.

This practice of more closely examining the trajectory of subpopulations through the public education system gives rise to the second expected trend: greater attention being paid to closing the gap between the highest and lowest performing students; between the highest and lowest performing schools; between the privileged and the disadvantaged; between those with special needs and those without; between members of various ethno-racial-cultural subpopulations; between boys and girls. In essence, public policy makers and education practitioners alike will be challenged to act in favour of equity of achievement and meaningful post-secondary destinations for all high school students.

This second trend is echoed by the number and nature of Ministry initiatives which continue to be woven within secondary school reforms, including the Ministry's recently

launched Aboriginal Framework; the thinking about differentiated instruction and Universal Design for learning; and initiatives for English language learners as well as those for boys and literacy. These kinds of initiatives will be available to respond in a more focused way to particular needs of students as they are presented in the data, and in classroom practice.

We can also expect that research and evaluation will continue to inform policy and programming. Three major studies currently being conducted, and a fourth that is expected, are related directly to the Student Success strategy. As well, dozens of other research and evaluation activities are underway with Ministry sponsorship on topics related to the curriculum, assessment, and parent engagement, and more are likely to contribute to better educational experiences for high school students in Ontario. The four studies are described below:

Mapping the Processes and Pathways of Transition from Elementary to Secondary School

The purpose of this study is to evaluate the effectiveness of transition planning implementation by school boards and to study transition processes as students move from elementary to secondary school. The principle investigator is Dr. Bruce Ferguson. The study will track approximately 1,200 grade 8 students over three years. Data will be collected using focus groups and interviews as well as by reviewing documentary evidence (such as curriculum, assessment results, and policies). Parents, school personnel, and policy makers will also take part in focus groups and interviews. Findings will be used to improve transition planning and supports which will enable teachers to work more effectively with at-risk students.

Student Success Lighthouse Projects Evaluation

Lighthouse projects are designed to encourage young people to stay in school or return to school and, ultimately, lead to graduation. Begun in 2004, there are presently 155 projects and 70 rural schools' projects in a related initiative. The purpose of the evaluation is to:

- Identify those factors that contribute to each project's success or non-success
- Assess the sustainability and/or transferability of the projects within boards and to other boards
- Assess the impact of the project on the school
- Describe the importance that students succeeding has within the school culture.

This evaluation is being conducted by Curriculum Services Canada during the 2006-2007 school year. Its findings will inform Ministry and school board decisions about effective practices for helping students recover credits, return to school, and find meaningful experiences in secondary school and beyond.

External Evaluation of Student Success / Learning to 18 Strategy

This evaluation is a major review of the entire Student Success / Learning to 18 strategy, examining not just at outcomes, but also how the elements of the strategy work together, including the supports to teachers and students, the resources provided and the

accountabilities established.

The evaluation questions are focused on the five key goals of the Student Success / Learning to 18 strategy, which are:

- To increase the graduation rate and decrease drop-out rates
- To support a good outcome for all students
- To provide students with new and relevant learning opportunities
- To build on students' strengths and interests
- To provide students with an effective transition from elementary to secondary school.

Accordingly, they seek to determine whether:

- Graduation rates are increasing and drop-out rates are decreasing
- Structures and supports are changing to better provide viable pathways for all students to learn to 18 and beyond, which lead to students' post-secondary destinations of choice
- New learning opportunities are being provided that are relevant to students
- Structures and supports are changing to better capture and build on the strengths and interests of all students
- Structures and supports are changing to better assist students in their transition from elementary to secondary school.

School boards and schools that are successful in introducing changes to help students succeed are likely to be those that have embraced, or are embracing, the fundamentals of school improvement. In evaluating progress toward the goals described above, the Ministry is also interested to know if there is evidence that:

- Accountability measures (monitoring, tracking, reporting and planning) are in place in schools and school boards and are being used by schools and boards in order to drive improvement
- Capacity to implement the Student Success / Learning to 18 strategy is being built in schools and school boards
- Schools and school boards are acting upon their student and school-level data and information to intervene with and support students appropriately
- Schools and school boards are making decisions in an effort to align resources and practices to the goals of the Student Success / Learning to 18 strategy
- Low impact initiatives are being replaced by high impact initiatives at all levels of the education system.

Dual Credits Evaluation

The fourth evaluation, which has not yet been launched, will aim to understand the usage and effect of dual credits on students and on the secondary and post-secondary systems. As a controversial component of the Student Success strategy, an evaluation will be an important means by which to establish the facts about dual credits for decision makers and stakeholders alike.

The Role of Leadership

An account of the role of research and data would not be complete without a look at leadership in this area at the provincial level. Calls for evidence-based or evidence-informed public policy have been around for a decade or more. The Ontario Ministry of Education experienced this call first-hand after the appointment of Education Minister Gerard Kennedy, the first education minister under the newly elected Liberal government, and, with the appointment in 2004, of Dr. Ben Levin as Deputy Minister, the highest civil servant role in the Ministry.

Kennedy had been the education critic when the Liberal Party was in opposition. Well-studied, he demanded that Ministry staff substantiate their claims and the merits of their advice. Levin, a researcher himself and a former Deputy Minister of Education in the Province of Manitoba, challenged the civil servants reporting to him to look to the evidence, whether in the research literature or in studies and evaluations to be sponsored by the Ministry.

But their commitment to the importance of research and evaluation for public policy making has gone beyond demands upon Ministry staff to provide evidence to back their advice. As with support of capacity building in school boards, the Ministry has invested in both hardware and systems, and in the knowledge and skills of its advisors.

Investments in hardware and systems have been already mentioned explicitly or implicitly in connection with the development and implementation of OnSIS. The investment in Ministry staff has occurred in many ways; they are described more fully in a companion paper to this document which discusses the Ministry's research framework.

A few changes are worthy of note here. They include organizational changes within the Ministry such as the establishment of the Assistant Deputy Minister's Research Committee to provide senior management leadership, the establishment of a Chief Research Officer for the Ministry to provide guidance and problem-solving on major research and evaluation projects and liaison with the external research community, the establishment of a "Researcher in Residence" position to incorporate a "critical friend" to provide advice to advance the research framework, and a Research Coordination Team that represents branches across the Ministry to insure communication and coordination. Specific to the Student Success initiative, a Research, Monitoring and Evaluation Unit has been established and funding has been allocated in its budget to undertake the functions suggested by its name and described above.

Capacity building among Ministry policy advisors has become a priority. The Ministry has created an Evaluation and Research Learning Program for its staff, which focuses on applying evaluation and research in the public sector context. The first class of 20 participants began in February, 2007.

In regard to relationship-building between the research community, school board practitioners and public policy developers, the Ministry has sponsored two provincial

research symposia and established the Ontario Education Research Panel to promote research activities connected with Ontario education priorities and goals.

Finally, while the value of connecting policies and practices with research is self-evident, putting research-based practices into effect requires substantial knowledge transfer and capacity-building. Early in the strategizing about secondary school reform, the Ministry found a leader in Barry O'Connor, a seasoned Director of Education, who was recruited to provide leadership on shaping and implementing secondary school reforms. Importantly, he had the independence of mind to challenge the assumptions underlying policy and program considerations, and the credibility among his school board peers to gain support for initiatives that made sense and rang true among educators for what is best for students.

Conclusion

The commitment to ongoing research, evaluation and monitoring of student success indicators promises to be an increasingly valued component of the Ministry's work, and that of educators across the province, in future years.

As demonstrated throughout this document, research has been a fundamental underpinning of the development and refinement of key initiatives designed to address critical issues within the education system, improve student achievement, and close critical gaps. Likewise, it is serving as an important platform for stakeholder dialogue and, over time, will play an increasingly critical role in supporting public confidence in education.

The prospect of a new student information system soon to be available with student level data raises the bar for Ministry analysts to carry out increasingly complex analyses, and to engage with, and contribute to, the broader research community within and outside of education.

Perhaps most significant and promising, however, has been the dramatic shift toward a culture of evidence-based policy and practice, not only at the Ministry, but extending to the school board, school and classroom, in a relatively short period of time. Research, evaluation and use of indicator data have given rise to a shared 'language' that crosses all barriers within the system, provides a basis for informed discussion and decision-making, and encourages leadership and shared ownership of student outcomes by policy makers, administrators, educators, parents and communities. This culture shift, and the increased reliance on, use of, and demand for, sound research data, has established research as an essential foundation for system-wide improvement, and enhanced outcomes for every Ontario student.

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