



Research Report

**TDSB SECONDARY STUDENT SUCCESS
INDICATORS, 2004-2005**

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TDSB Secondary Student Success Indicators, 2004-2005
Robert S. Brown, Ed Doc

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EXECUTIVE SUMMARY

Background

In 2000, at the request of the TDSB Executive Office, Organization Development/Research and Information Services undertook to design a series of Success Indicators at the secondary level. The Indicators were developed how well students were doing, to identify areas that need additional attention, and to bring about improvement. They were also intended to monitor changes over time. The 2004-5 Secondary Student Success Indicators are the fifth annual set calculated in the same way, providing a basis for trend analysis. The focus here is on *annual* school results. In addition, a number of studies are ongoing, following cohorts of TDSB Grade 9 students for up to seven years of secondary study.

The main source of information was a series of databases drawn from the Student Information Systems currently being used in the TDSB, as provided by the Data Warehouse. This was supplemented by several other sources of information, including: data on TDSB post-secondary applications, confirmations, and registrations to university, as collected by OUAC (Ontario Universities' Applications Centre) and OCAS (Ontario College Applications Services); student-level information on EQAO's Ontario Secondary School Literacy Test (OSSLT) and EQAO's administration of the 2004-5 Grade 9 Math assessment; Grade 8 Report Card data from Term 3 2003; and information from the 2001 Census.

General Trends

Over the five school years from 2000-1 through 2004-5, the Secondary Student Success Indicators have documented a modest but consistent increase in student achievement. For example, the proportion of at-risk Grade 9 cohort students (those completing fewer than seven credits by the end of Grade 9) has declined from 20% in 2000-1 to 16% in 2004-5. The proportion of Grade 9 cohort students with no Math credit declined from 18% to 12% over the same period, and similar patterns are seen in Grade 9 English and Science achievement.

The increases are often difficult to measure on a year-to-year basis. Thus, in looking at the credit accumulation patterns of Grade 10 students, we find no change in the proportion of at-risk students between 2003-4 and 2004-5, but the five-year trend shows an overall (if slight) increase in overall credit accumulation patterns (65% of all Grade 10 students had completed 16 or more credits in 2004-5, compared to 62% in 2000-2001).

This moderate but notable increase in TDSB achievement is taking place against a backdrop of important educational and social trends: Ontario curricular change; larger North American change in access to post-secondary education; and thirdly, increasing social strain. Each deserves much more detailed analysis than can be provided here, but will be briefly outlined.

1) The TDSB Secondary Student Success Indicators started as Ontario migrated from the former OS:IS curriculum implemented two decades ago, to the new OSS curriculum which was officially implemented in Fall 1999. The most clearly documented change we found has been in the university-bound students. Under OS:IS, most students finished their secondary diploma requirements in Year 4 of secondary study but usually took an additional Year 5 to complete requirements for admission to university. Under the new OSS curriculum, the university-bound were much more likely to finish their secondary requirements AND their university prerequisites in four years. The relationship of OSS to graduation and dropout patterns is less clear.

2) It is clear that we are in the midst of increasing post-secondary access to education. This has not been discussed in great detail but the evidence is clear. Thus, the number of secondary school applicants to OUAC has increased from 53,790 in 1997 to 76,300 in 2006, an increase of 22,510 or 42% over ten years. The change is not just Ontario-wide but part of a much greater picture. The intersection of the OSS changes and the larger picture of increasing post-secondary participation have resulted in a somewhat blurred picture. Thus, the proportion of 17 year old students applying to and accepted into university has increased since the implementation of OSS in 2002-3, from 33% to 39%.

Whether this is part of the larger post-secondary trend, or a delayed result of OSS, is impossible to say at this time.

3) The time has been one of great social transition. Toronto is a city of great social differences, with extremes of rich and poor. Thus, the neighbourhood (dissemination area) range of family income ranges from \$11,415 at the lowest end to \$1,915,657 at the upper end. But perhaps just as troubling, the extremes show signs of increasing. According to the City of Toronto, the number of City households increased by 22% between 1980 and 2000, but the rate of increase was not uniform. Lower income households increased by nearly 50%, high-income households by 42% and middle income households by only 8%” (City of Toronto, Policy and Research, 2004). Likewise, researchers from the United Way of Greater Toronto have chronicled how the increase in poverty in Toronto has noticeably increased in what are called the ‘inner suburbs’ (The United Way’s *Poverty by Postal Code* reported an “astonishing” 137% increase in the number of poor families in the former City of Scarborough between 1981 and 2001).

Given these developments, the modest increases in TDSB achievement documented in this report are even more encouraging than may appear on first sight. One obvious next question is whether the increasing social polarization is manifesting itself in educational achievement. There are great gaps in achievement amongst the TDSB student population. It is comforting that while the gaps are wide, there is no evidence that they are increasing. Yet this will need to be closely monitored into the future. It may be that the imperfect information available so far, and the comparatively short (five year) monitoring period, cannot show the sorts of patterns seen in longer-term research.

Achievement Gaps

Achievement gaps in the TDSB population have been profiled in other reports but are worth summarising here.

Gender

There is a consistent gap between males and females measured throughout all the TDSB Secondary Student Success Indicators. The only exception is EQAO's Grade 9 Math assessment, but this is an artefact of EQAO's Grade 9 Math assessment missing a highly at-risk population— the mostly male students who were not taking Math in Grade 9, or taking locally-developed/Essentials Math courses.

Age-appropriate versus older students

The Grade 9 cohort most clearly showed that older students are much more likely to be at-risk than students who are age-appropriate. Likewise, older Grade 12 students are less likely to apply to university than age-appropriate Grade 12 students. The dropout rate is also higher for older (18 year old) students, and the graduation rate lower.

Mobility

It would appear that students moving on a non-standard or unscheduled way— transferring to schools outside the TDSB, or switching from school to school within the TDSB – were less likely to have achieved as well as students staying in the same school. It is not necessarily the move itself, since students in the authorised Junior High Schools going from Grade 9 to Grade 10 tend to do better than other TDSB students staying in the same school.

Income

The great disparity between student 'micro-neighbourhoods' is evident across all indicators. For example, of students participating in the 2004-5 EQAO Math assessment living in the lowest income neighbourhoods, 38% had achieved at Levels 3 or 4; of students living in the highest income neighbourhoods, 72% had achieved at Levels 3 or 4, almost twice the rate of the lowest-income neighbourhoods.

Previous Academic Achievement

Students with academic difficulties in Grade 8 are much more likely to have academic difficulties in Grades 9 and 10.

Program of Study

Students in the Grade 9 cohort taking Academic courses (according to the majority of courses taken) were more likely to have completed 7 or more credits than other students. Students taking Academic courses were much more likely to do well in Math, English and Science than were other students, a pattern seen over two years.

Neighbourhood

The 140 City of Toronto neighbourhoods are becoming the key geographical unit used for urban planning. The neighbourhood for each 2004-5 secondary student was located using the postal code of student residence. Four variables were examined at the neighbourhood level: proportion of students in each neighbourhood achieving at Levels 3 or 4 in the EQAO Grade 9 assessment; proportion of first-time eligible students passing the literacy test (OSSLT); proportion of 17 year old graduates; and proportion of 17-21 year old applicants to university in 2005. All were related, although the proportion of university applicants had the strongest correlation with each of the other variables. While there were exceptions, in general, the geographical distribution of achievement according to neighbourhoods, tended to reflect to 'U' shape of socio-economic challenge that has been well documented in other studies (e.g. United Way, 2004; Brown, 2005b).

Absenteeism

Absenteeism is an important variable but it should be cautiously examined, in that absenteeism patterns change according to age and grade of students, especially in the secondary panel. The relationship of Grade 9 and 10 absenteeism with achievement (Grade 9 and 10 credit accumulation and OSSLT literacy test results) is very clear: as the absenteeism rate increases, so does the proportion of at-risk students. Students who had more than 10% absenteeism (that is, absent from school more than 1 day every two weeks) were more likely to be at-risk, while the vast majority of students absent from school more than a day a week (above 20% absenteeism) are at-risk. Beyond a certain point, the population of truant students and the at-risk population converge to become one and the same.

Key Languages

Although there are well over 75 languages represented in the TDSB, many languages are spoken by a relatively small number of students. Students in the 2004-5 Grade 9 cohort spoke twenty-one “key” languages, in that 100 or more students in the cohort spoke them (these languages accounted for 91% of the students; half the students in the cohort spoke English only). The language groups with the highest at-risk status in both 2003-4 and 2004-5 were Spanish, Portuguese, and Somali.

Immigration and Region of Birth

The relationship of immigration to secondary academic achievement is complex. In general, there is little achievement difference between Grade 9 cohort and Grade 10 students born in Canada or born outside of Canada. However, this hides great differences among students born outside of Canada. Students born in the English-speaking Caribbean, Central/South America/Mexico, and Eastern Africa tend to be more highly at-risk than the average; students born in Eastern Europe, South Asia, and Eastern Asia tend to be less highly at-risk than the average; students born in Canada tend to have average at-risk (at part because most students are born in Canada). Year of arrival in Canada by itself does not appear to have made a great deal of difference in the overall credit achievement of Grade 9 students. There is a difference in literacy test (OSSLT) achievement: the majority of recent arrivals who actually wrote the test passed, but the difference is in the proportion of students who were deferred. After about 5 years in Canada, the difference in deferment between students born in Canada and those born outside Canada becomes minor. It is usually thought that it takes 5-7 years for students to achieve complete proficiency in English; the pattern of OSSLT seems to reflect this.

Recommendations and Suggestions for Future Research

1. There are many different definitions of ‘grade’ in the Ontario secondary panel, which has resulted in a great deal of confusion and miscommunication. The same can be said for many other terms, e.g., Special Education and Program of Study. The Ministry of Education, or some other central authority/association (e.g. AERO) would be providing a positive contribution if it could take the leadership in coming up with consistent and implementable definitions of key educational terms (defining grade and program of study would be a good start).
2. This analysis has found that the proportion of students taking Special Education courses appears to be double that reported to the Ministry; the Ministry’s definition includes only students with half or more of programming in self-contained Special Education courses, while many students taking these courses may be taking only one or two courses at a time, and may or may not be officially designated according to the IPRC selection process. Given the very real issues in achievement by Special Education students documented here, it is important to look more clearly at patterns of these various subgroups of Special Education.
3. There are also obvious other areas for future research around Special Education-- e.g. the relationship between Special Education and the locally-developed/Essentials program of study, and an examination of demographic and socio-economic variables.
4. There are a number of issues around the EQAO Grade 9 Math and Grade 10 OSSLT tests that should be examined by EQAO, the Ministry, and the TDSB in more detail.

Grade 9 Math

- 4a. Many students taking the EQAO Grade 9 Math course are clearly not Grade 9 students, and many students in Grade 9 are not assessed by the Math test. This is not a problem per se, as much as it is a communication issue, in part related to fluidity in the definition of ‘grade’. However, the lack of assessment of many Grade 9 students is

troubling-- many of the most at-risk students are not participating in the EQAO Math assessment, because participation in the assessment is tied entirely to participating in Academic and Applied Grade 9 Math. Since most of these missing students are male, this also provides a slightly tilted version of Math achievement by gender (male achievement in Math would be lower if these students were included).

4b. EQAO's insistence in releasing Grade 9 Math results only according to program of study, and not combining them, can be problematic. There is room for both combined and detailed results, in much the same way that EQAO releases OSSLT results according to total and each program of study.

4c. There is a mismatch between the Levels R –4 in EQAO Math and in assessment by teachers. In particular, the proportion of students assessed as Level 4 by EQAO is only a fraction of that assessed as Level 4 by teacher assessment. It is important to explore the reasons for this difference, and to clearly articulate that the achievement distribution of EQAO (in Grade 9 as well as 3/6) does not reflect the distribution of achievement according to teacher assessment.

Grade 10 OSSLT

4d. Organizational Development/Research and Information Services has documented that in at least three administrations of the OSSLT, thousands of students designated as 'first-time eligible' write the OSSLT two or (in a few hundred cases) three times. This has profound system implications. In 2004-5, less than one fifth of these spurious first-time eligible students passed the OSSLT. Had they been correctly classified as previously-eligible, the OSSLT pass rate of TDSB first-time eligible students would have increased from 64 to 67% (Method 1) and 76 to 78% (Method 2).

5. It has been clearly documented in this and previous TDSB research (e.g. Brown, 1993, 1995, 2002) how non-standard moves tend to be closely related to lower achievement patterns. That is, "non-standard moves" refers to changing secondary schools in an unscheduled way e.g., transferring schools after Grade 9 or Grade 10, entering the TDSB after October 31 of the school year, entering the TDSB after Grade 9.

Organizational Development/Research and Information Services already has a series of cohort studies, following students starting Grade 9 in the TDSB in a specific school year for a total of up to seven years in the secondary panel. The first of these cohort studies, looking at the Grade 9 cohort of Fall 2000, has followed the students to the end of Year 5 (Brown, in press). However, we also need to follow the non-cohort students, students entering the TDSB after the beginning of Year 1/Grade 9. This fits into neither the usual paradigm of cohort studies, nor the annual outcomes as seen in this analysis, but would be a methodological hybrid.

6. Post-secondary success seen in Parts 10 and 11 of this report has examined the transition from secondary to post-secondary over one-year snapshots. The information provided by OUAC and OCAS shows students applying in the ‘direct transition’ to post-secondary: that is, they are applying through their most-recently attended school/school board. Some are not physically present in the school at the time (and indeed, many are not in the TDSB at the time they apply to post-secondary; in Great Britain this is normally referred to as a ‘gap year’) yet they have been in the system so recently that they clearly fit into the established transition process. However, many students also apply to post-secondary at a later period of time, after what is clearly an educational disruption of several years. We know comparatively little about these students. Preliminary analysis of TDSB OCAS data has found that the number of CAAT applicants from the ‘indirect transition’ is about the same as the number of ‘direct transition’ applicants.

Organizational Development/Research and Information Services is working with OCAS in a pilot investigation of both the TDSB direct and indirect transition over 2003-4 and 2004-5 (Brown and Bell, in progress).

7. This study has several methodological limitations due to the nature of the administrative data collected but one of the most glaring is the inability to verify exit codes. With the Ontario Education Number (OEN) now in use, the Ministry can now have the opportunity to provide information back to the DSB’s.

8. On a related note, we currently have very limited information on how our students do once they enter the post-secondary system. There are a number of pressing equity and accountability reasons for DSB's to work with post-secondary institutions, in tracking DSB students as they progress through the post-secondary system, in much the same way the Organizational Development/Research and Information Services has been tracking TDSB students in the elementary and secondary panels.

9. This research has found a moderate but consistently positive improvement of secondary student achievement over five years of annual outcomes, while at the same time documenting tremendous socio-economic and demographic diversity. Simultaneously, others have been documenting an increasing social polarity of 'haves' and 'have nots' within the City of Toronto. The Secondary Student Success Indicators and TDSB secondary cohort studies have now provided a solid baseline for long-term monitoring of the TDSB secondary school system. It will be necessary to examine, in a consistent way, changes between groups over time, to see how the social trends taking place in Toronto interact with TDSB student success.

INTRODUCTION

In 2000, Ontario's Education Improvement Commission (EIC) recommended that school boards should report on different measures of student progress. At the request of the TDSB Executive Office, Organization Development/Research and Information Services undertook to design a series of Success Indicators at the secondary level.

A set of annual indicators was developed to monitor secondary student achievement over each school year. It examined achievement of students in the Grade 9 cohort (students starting their secondary studies that fall); Grade 10 students; outcomes (including graduation and dropout) of 18 year olds; and applications to post-secondary.

The Indicators could be considered a limited, one-year tracking study. Most indicators looked at students at the beginning of the school year (October 31) and followed them for one school year (until October 31 of the next school year).

The Indicators were developed to measure how well students were doing, to identify areas that need additional attention, and to bring about improvement. They were also intended to monitor changes over time. The 2004-5 Indicators are the fifth annual set calculated in the same way, providing the basis for trend analysis.

In addition, each release adds information. Thus, Grade 9 cohort Science achievement was added in 2001-2, as well as dropout/graduation and post-secondary applications of 17 year olds in 2002-3 (when the new OSS curriculum and 'double cohort' changed graduation and post-secondary patterns). This release looks at EQAO Grade 9 Math achievement, characteristics of Grade 9 and 10 students taking Special Education courses, and the relationship between Grade 8 Report Card results with achievement of the same students two years later, in Grade 10.

Several sources of information have been used to develop the Secondary Student Success Indicators:

1. Information drawn from the Student Information Systems currently being used in the TDSB, as provided by the Data Warehouse;
 - Demographic data for approximately 285,000 elementary and secondary students (e.g., date of birth, grade, gender, country of birth);
 - Exit dates and exit codes of TDSB secondary students;

- Absenteeism of TDSB secondary students;
 - Snapshots of all TDSB students at various points in time (e.g., Spring 2004, May 2004, Fall 2004, June 2005, Fall 2005);
 - Transcript data for secondary students (including subject, mark, and credit information on all courses);
 - Information on Ontario Scholars and attainment of the Ontario community service requirement; and
 - Data on Ontario Secondary Student Literacy Test (OSSLT), intended as a supplement to data as provided by EQAO.
2. Data on TDSB applications, confirmations, and registrations to university, as collected by OUAC (Ontario Universities' Applications Centre).
 3. Data on TDSB applications, confirmations, and registrations to community colleges, as collected by OCAS (Ontario College Applications Services).
 4. Data from the EQAO Ontario Secondary Student Literacy Test (OSSLT) from the student-level data from EQAO's administration of the 2004-5 Grade 9 Math assessment.
 5. Grade 8 Report Card data from Term 3, 2003.
 6. Family income data from the 2001 Census (the average income of families living in a City of Toronto Enumeration Area, or EA, which was then linked to the student datasets using the postal code of student residence).

As noted the focus in this report is on *annual* board results, compared to achievement of similar TDSB students over previous years. It is also important to follow the same students over time. Therefore, we are continuing to track the Grade 9 cohorts of students as they progress through the TDSB secondary panel. An interim report last year looked at the first four years of the Grade 9 cohort that started in Fall 2000 (see Brown, 2005a). We are providing an update, showing the first five years of progress ending in Fall 2005 (Brown, in progress). Ultimately, each cohort will be tracked for seven years, until all students would have either graduated or dropped out. Thus, the monitoring of the Grade 9 cohort of 2004-5 profiled in this report will conclude in Fall 2011.

PART 1: INDICATORS OF THE GRADE 9 COHORT 2004-5

Overview of the Grade 9 Cohort of 2004-5

A total of 17,823 students were identified as starting their Grade 9 studies at the TDSB in Fall 2004, and were still present at the end of the school year (June 2005, using the Data Warehouse download of that month). Nearly all (99.9%) had an identifiable Grade 9 homeroom. Gender distribution was normal: 48% female, 52% male.

While 91% were identified as elementary students in their legacy SIS system in March 2003, 9% were not. Most of these would have come from outside the TDSB, either from other educational authorities in Ontario, or from other countries. Note that the proportion of Grade 9 students coming from outside the TDSB has been declining in recent years (for example, from 12% in 2002-3 to 9% in 2004-5).

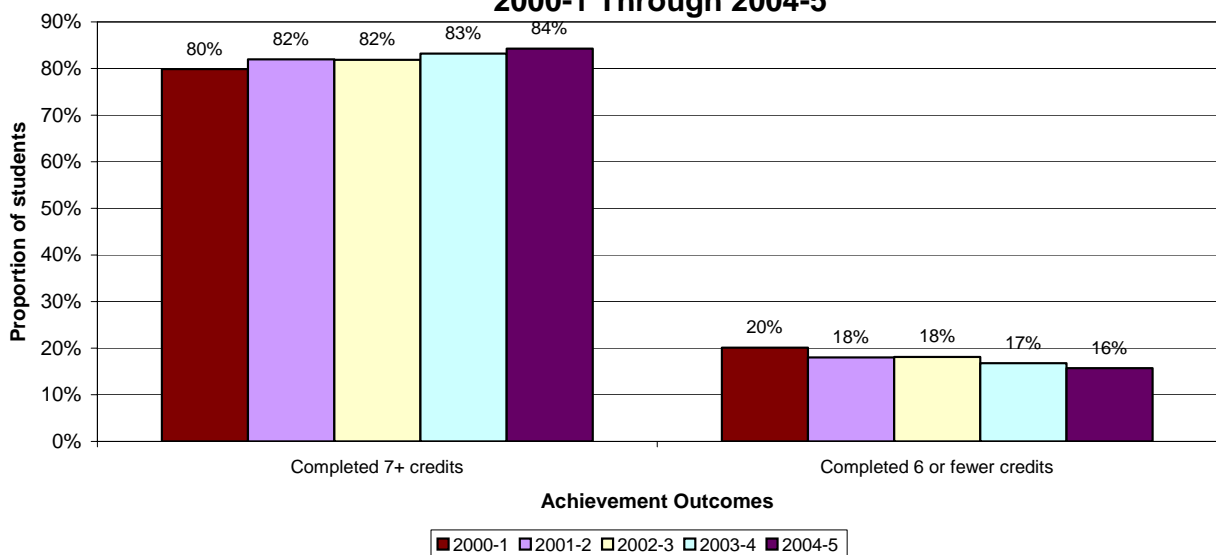
Students who were retained in the elementary system tend to be much more highly at-risk than students who were not retained. Of this cohort, 95% were age-appropriate for Grade 9 (born in 1990) while 4% were a year older (born in 1989) and 1% were a year younger (born in 1991). This proportion has been virtually unchanged over the past five years.

Students in the TDSB were born in over 150 countries. To simplify analysis, these countries have been categorized into major geographical regions of birth (e.g. East Asia for the area including China and Hong Kong, South Asia for the area including India, Pakistan and Bangladesh). The majority of Grade 9 students (64%) were born in Canada. The proportion of Canadian-born students in the cohort has been increasing over previous years (59% of the Grade 9 cohort of 2002-3 were born in Canada). Most frequent regions of birth outside Canada were: South Asia (9%), East Asia (9%), Eastern Europe (4%), Western Asia (4%) and the English-speaking Caribbean and region (2%).

a. Credit Accumulation of Grade 9 Students by the End of the 2004-5 School Year

- Previous research (e.g. Brown, 1999) found that Grade 9 and 10 achievement patterns tended to be very powerful predictors of students’ subsequent secondary school performance. The probability that students will not graduate from high school within the expected timeframe increases dramatically as students fail to acquire the requisite number of credits in Grade 9.
- With respect to students in Grade 9 in the 2004-5 school year, overall, 84% of these students had successfully completed 7 or more credits by the end of the school year.¹
- Slightly under one-fifth (16%) of students had completed less than 7 credits by the end of their Grade 9 year. Based on the research referenced above, failure to complete an adequate number of credits in Grade 9 significantly increases the risk of not completing high school on time.
- The proportion of at-risk Grade 9 students has declined over the last four years, from 20% in 2000-1.

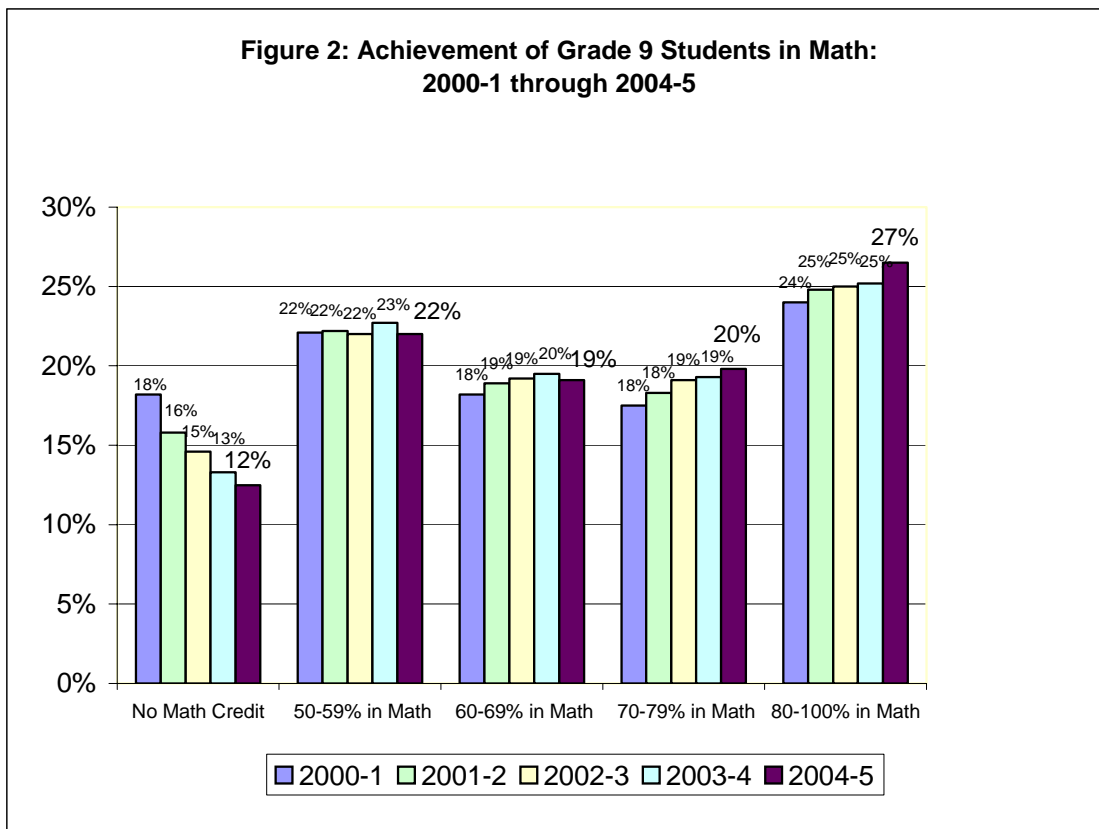
Figure 1: Credit Accumulation of Grade 9 Cohort Students, 2000-1 Through 2004-5



¹ Grade 9 students are defined as students between the ages of 13 and 15 who are new to the secondary system, according to student records.

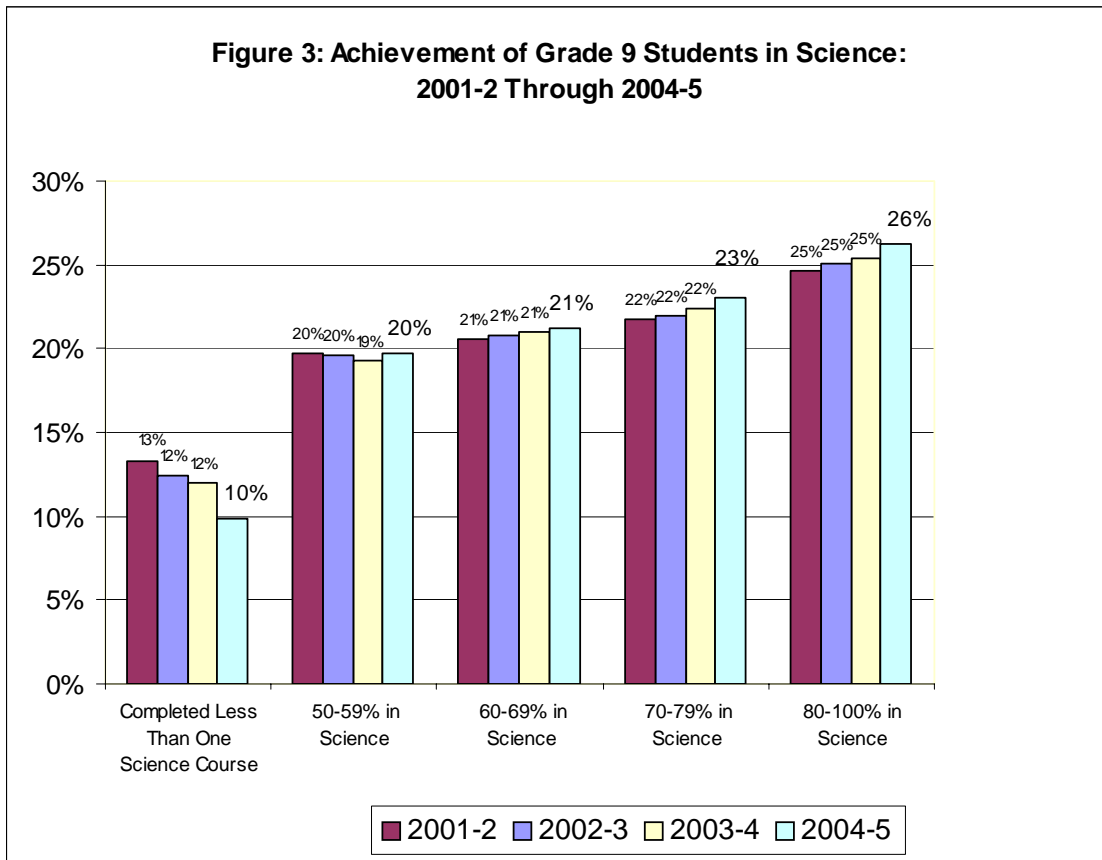
b. Results for Grade 9 Students in Mathematics 2004-5

- Over one quarter of all Grade 9 students had a mark of at least 80% in Grade 9 Mathematics.
- Slightly under half of students (47%) had a mark of 70% or greater in Grade 9 Math.
- The key improvement has been in the proportion of the lowest-achieving students. About 12% of Grade 9 students either failed or withdrew from their Math course or completed less than one credit in Math, compared to 18% of Grade 9 students in 2000-1.



c. Results for Grade 9 Students in Science 2004-5

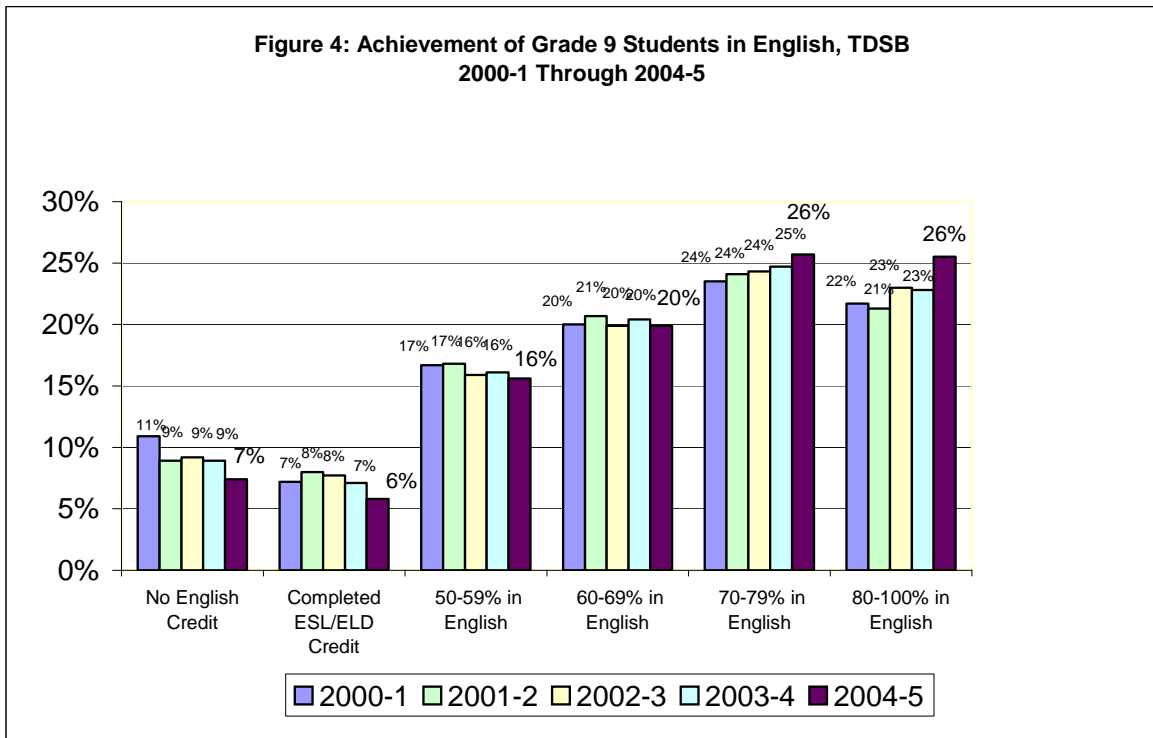
- Over one quarter of all Grade 9 students had a mark of at least 80% in Grade 9 Science.
- Nearly half the students in the cohort (49%) had a mark of 70% or greater in Grade 9 Science.
- About 10% of Grade 9 students either failed or withdrew from their Science course or completed less than one credit in Science, a decline from 13% in 2001-2.²



² Information on Science was first collected in 2001-2.

d. Results for Grade 9 Students in English 2004-5

- 26% of all Grade 9 students had a mark of at least 80% in Grade 9 English.
- Over half of cohort students (52%) had marks 70% and over in Grade 9 English, compared to 46% in 2000-1.
- About 7% of Grade 9 students either failed or withdrew from their English course or completed less than one credit in English (a decline from 11% of students in 2000-1). In addition, 6% of Grade 9 students had completed ESL/ELD courses rather than an English course.

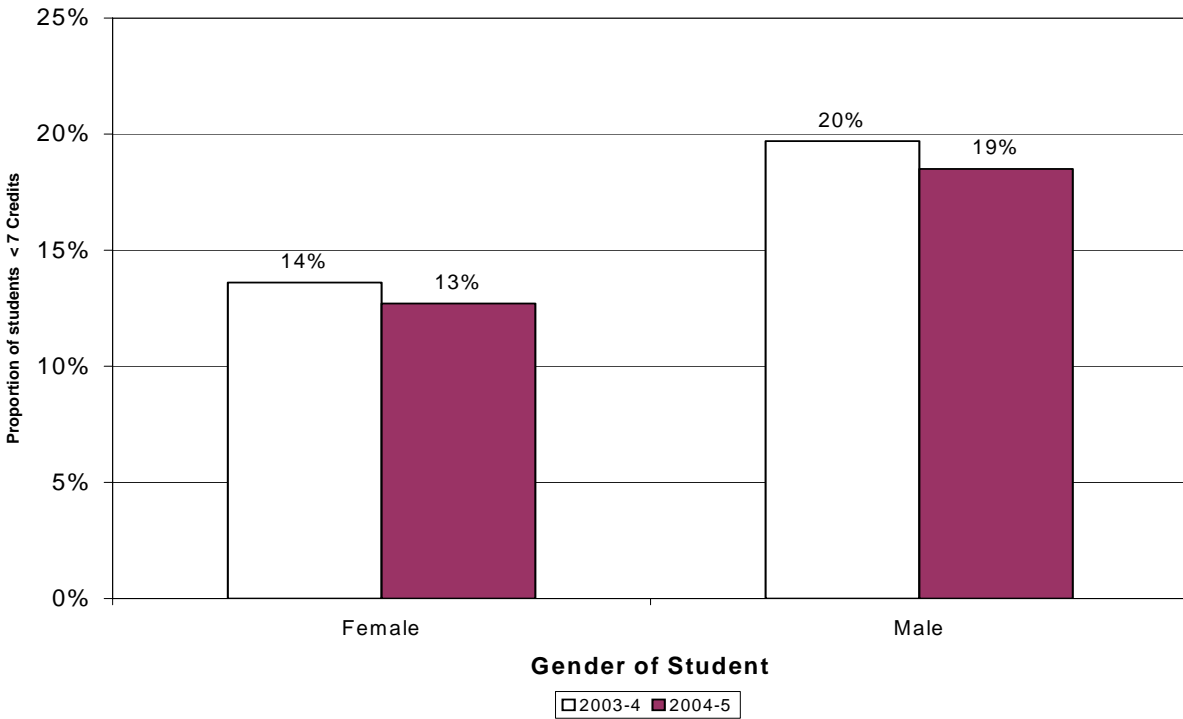


**PART 2: IDENTIFICATION AND TRACKING OF
AT-RISK STUDENTS:
EXAMPLE OF CREDIT ACCUMULATION OF
THE GRADE 9 COHORT, 2004-5**

a. Gender

- Male students are more at-risk of not completing school on time (i.e., 19% of males had completed fewer than 7 credits by the end of Grade 9, compared to 13% of females).

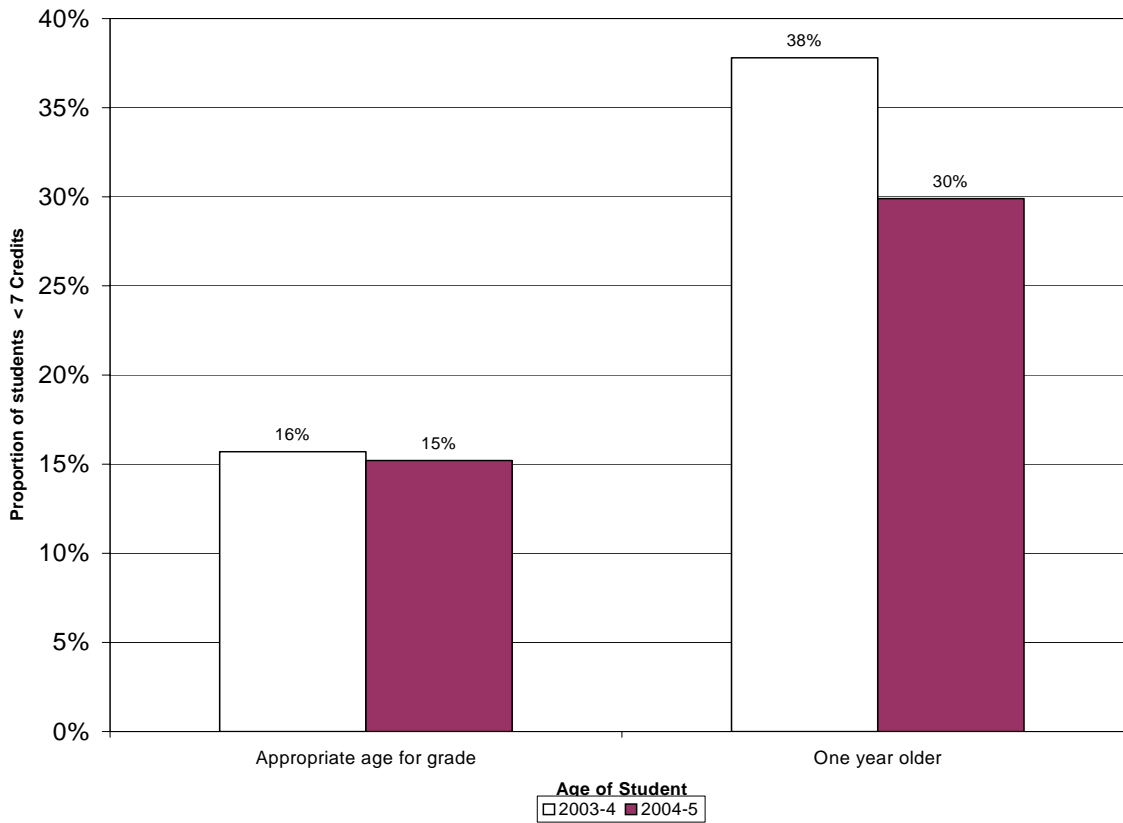
Figure 5: Female and Male Grade 9 Students with <7 Credits



b. Age

- While 95% of Grade 9 students were age-appropriate (born in 1990), 4% were a year older (born in 1989). These older students were twice as likely (30% vs. 15%) to be at-risk with respect to credit accumulation than students who were at the expected age for Grade 9. These findings are very similar to those found in previous years, although as seen, the proportion of at-risk older students is somewhat lower than 2003-4.

Figure 6: Age of Grade 9 Students with <7 Credits



c. Program of Study

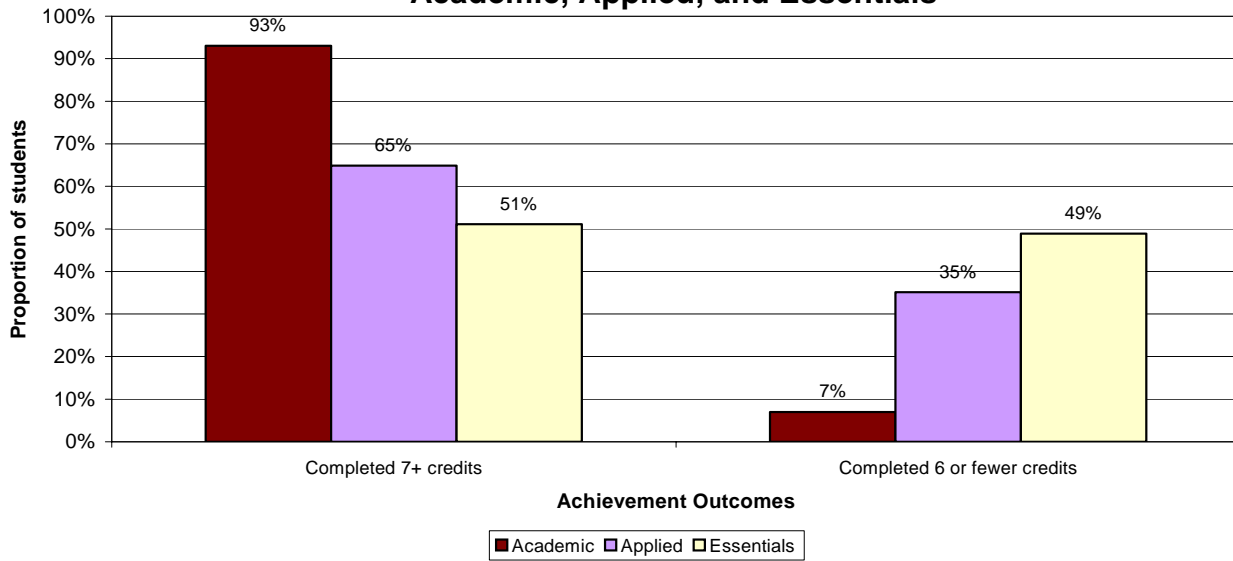
- Grade 9 students were classified into program of study according to the majority of courses (regardless of subject). For example, if the majority of a student's courses were in the "Academic" program, the student was classified as an "Academic" student.³
- Around three quarters (72%) classified this way were students taking primarily "Academic" courses; 23% were taking primarily "Applied" courses; while 4% were taking primarily "Essentials" (locally-developed) courses. The course preference of slightly less than 1% of students could not be determined.
- There were dramatic achievement differences between students who took Academic, Applied and Essentials courses. Students taking Academic courses were much less likely to be 'at-risk' through Grade 9 credit accumulation, and much less likely to have failed, withdrawn, or completed less than one credit in Math, Science, or English compared to other students. Students taking Academic courses were also much more likely to have achieved marks of 70% or more in Math, Science, and English. See the attached figures for more detail.

³ Note that a student might be classified as being in one program of study, according to the majority of credits taken, but be taking Math or Science in another program: for example, if a student was taking Applied level Grade 9 Math but a majority of his/her credits were Academic, the student is classified as taking Academic courses.

d. Relationship of Grade 9 Credit Accumulation to Program of Study

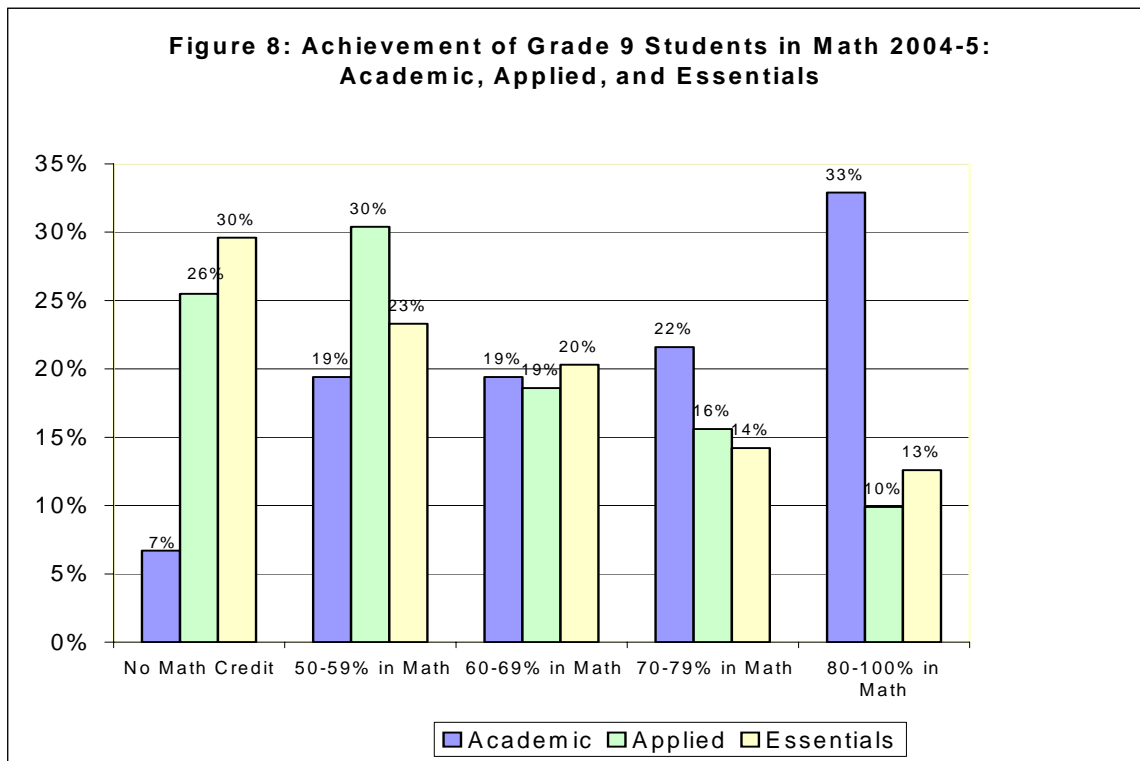
- Students in the Grade 9 cohort taking Academic courses (according to the majority of courses taken) were more likely to have completed 7 or more credits than other students: 93%, compared to 65% of students taking Applied courses and 51% of students taking Essentials courses.

Figure 7: Credit Accumulation of Grade 9 Students: Academic, Applied, and Essentials



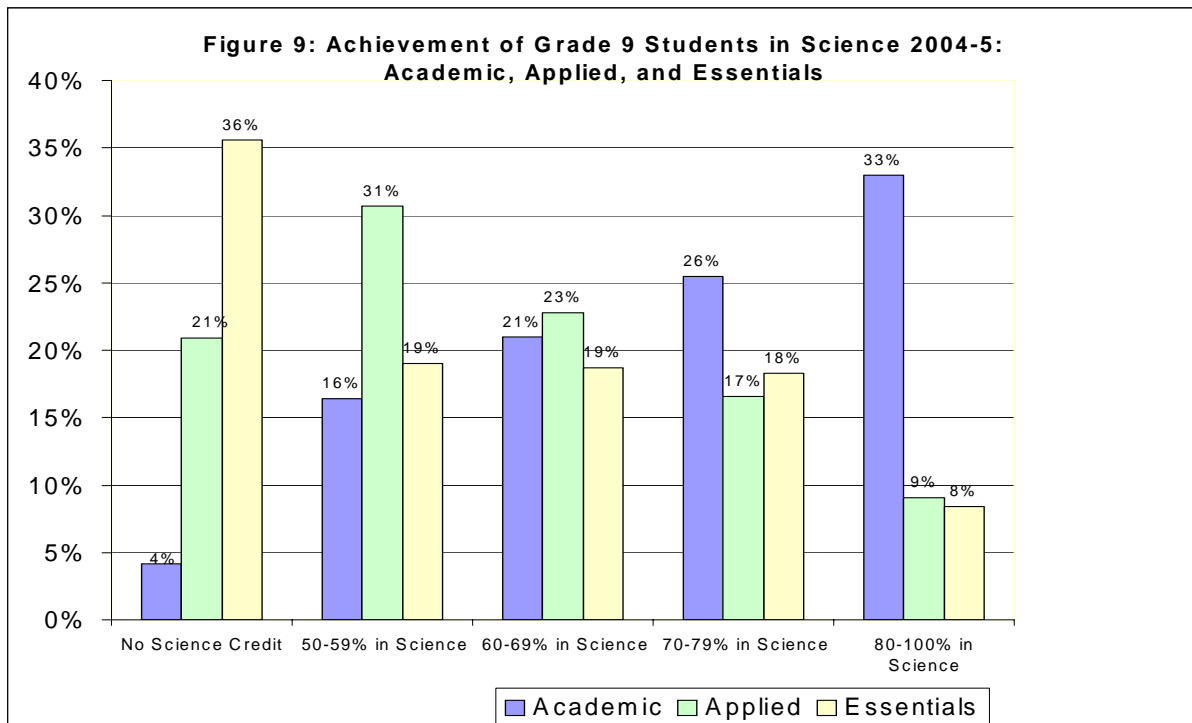
e. Relationship of Grade 9 Mathematics Achievement to Program of Study

- Grade 9 cohort students taking Academic courses (according to the majority of courses taken) were much more likely to do well in Math than were other students.
- Only 7% of students taking Academic courses failed, withdrew, or completed less than one Math credit, compared to 26% of students taking Applied courses and 30% of students taking Essentials courses.
- 33% of students in the taking Academic courses achieved a mark of 80% or above, compared to 10% of those taking Applied and 13% of those taking Essentials courses.



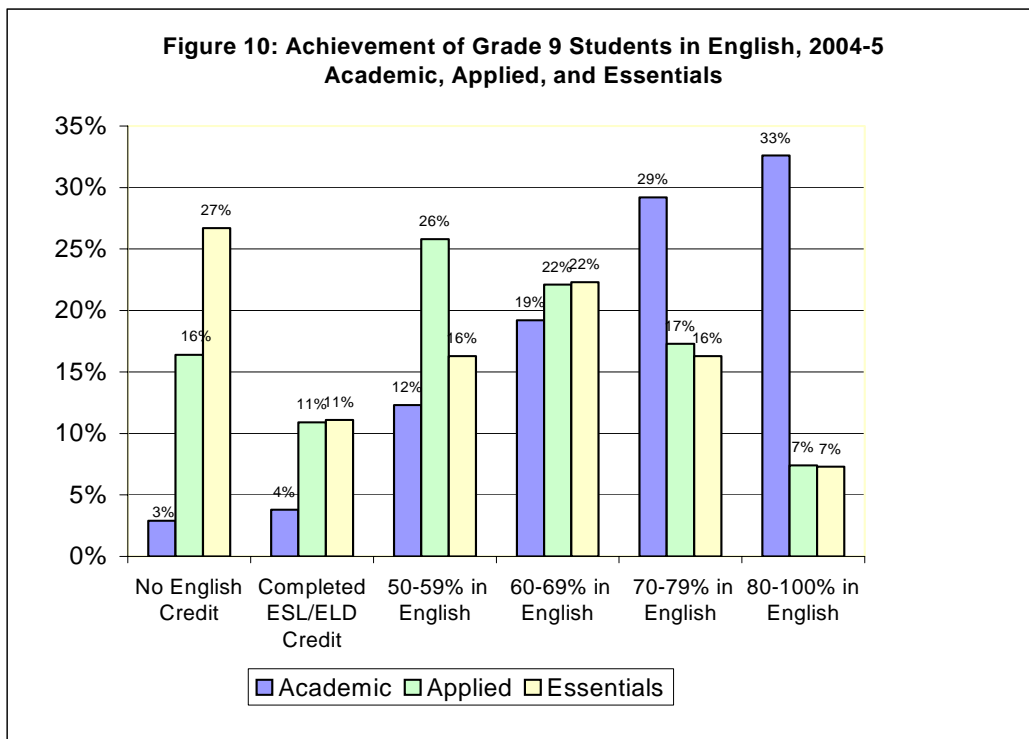
f. Relationship of Grade 9 Science Achievement to Program of Study

- Grade 9 cohort students taking Academic courses (according to the majority of courses taken) were much more likely to do well in Science than other students were—the same pattern seen with Math achievement.
- Only 4% of students taking Academic courses failed, withdrew, or completed less than one Science credit, compared to 21% of students taking Applied and 36% of students taking Essentials courses. On the positive side, the proportion of students taking Essentials courses who completed less than a credit had declined from 2003-4 (from 50% to 36%).
- 33% of students taking Academic courses achieved a mark of 80% or above, compared to 9% of those taking Applied and 8% of those taking Essentials, a pattern similar to 2002-3. (This was an increase of 2% among students taking Academic courses, but the proportion of high Science-achieving students in the other programs of study remained the same.)



g. Relationship of Grade 9 English Achievement to Program of Study

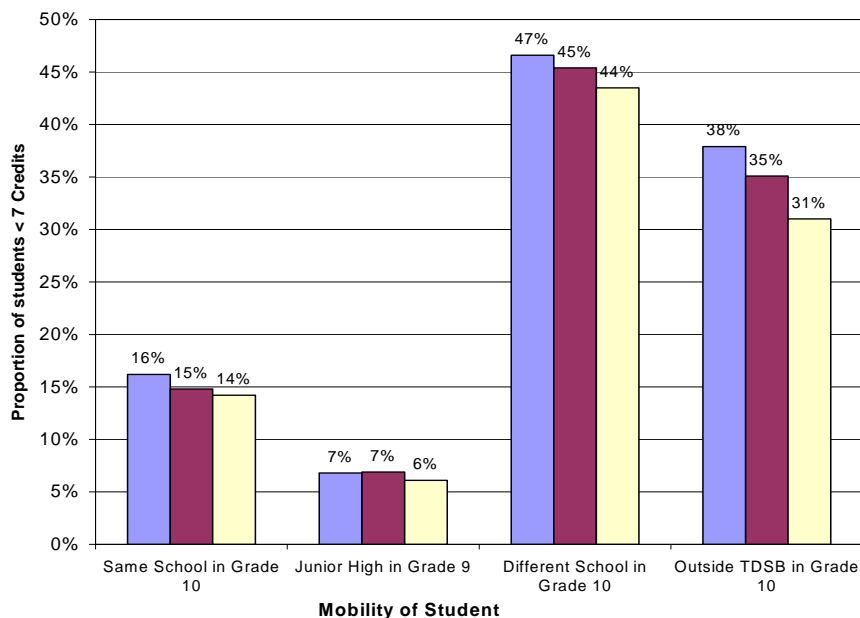
- Grade 9 cohort students taking Academic courses were much more likely to do well in English than were other students, replicating the pattern seen with Math and Science.
- Only 3% of students taking Academic courses failed, withdrew or completed less than one credit in their Grade 9 English course compared to 16% of students taking Applied and 27% of students taking Essentials courses. Students taking Academic courses were also much less likely to have completed an ESL/ESD course.



h. Mobility: Changing Schools between Grade 9 and Grade 10

- Of Grade 9 students in Fall 2003, 85% were attending the same school a year later. In addition, 6% had attended Grade 9 in Junior High Schools and had transferred to Grade 10 high schools by Fall 2004 in a scheduled manner. This left 9% of Grade 10 students who switched schools in an unscheduled way: 5% who transferred from one TDSB secondary school to another, and 4% who had left the TDSB by Fall 2004. This proportion is very similar to previous (2003-4 and 2002-3) Grade 9 cohorts.
- Mobility between Grade 9 and Grade 10 appears to be strongly related to at-risk status. Students who switched TDSB secondary schools between Grade 9 and Grade 10 were thrice as likely to be at-risk as those who stayed in the same school (44% vs. 14%); those transferred to outside the TDSB were also more at-risk (31%). However, students who transferred from Junior High Schools to Grade 10 secondary schools were less at-risk (6%), showing that movement from one school to another does not in itself cause at-risk status. As seen in Figure 11, this relationship is very similar to that of the previous cohort, although the proportion of at-risk students has been slightly declining across all categories.

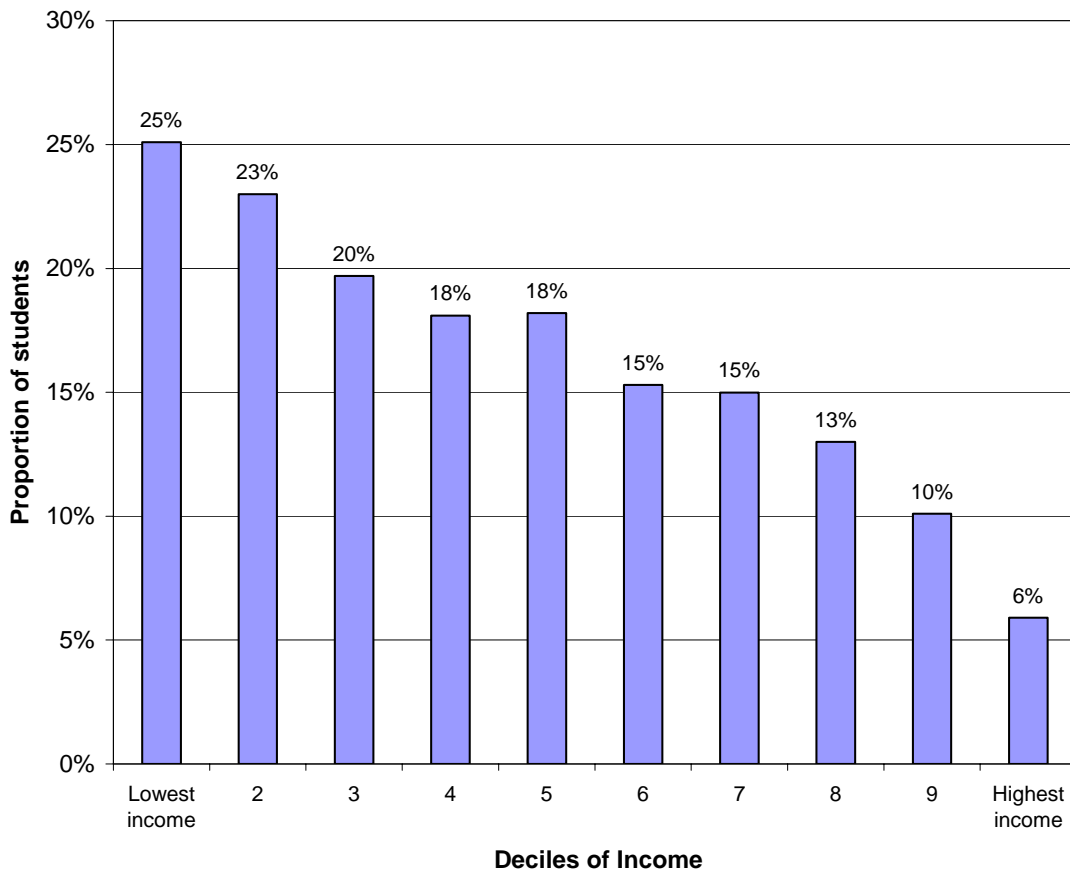
Figure 11: Grade 9 Students At Risk with Respect to Credit Accumulation, and Mobility Between Grade 9 and Grade 10, 2002-3, 2003-4 and 2004-5



i. Neighbourhood Income

- Student income was approximated by using the average family income of the neighbourhood of student residence, according to the 2001 national census. All students in the TDSB were divided into 10 income groupings, from lowest income to highest income.
- Grade 9 at-risk status (those students who had achieved less than 7 credits in Grade 9) is strongly related to family income of the students' neighbourhood.
- While 25% of Grade 9 students in the lowest income grouping had achieved less than 7 credits by the end of Grade 9, only 6% of students in the highest income grouping had failed to acquire 7 or more credits. This pattern is very similar to that of previous years.

Figure 12: Grade 9 Students At-Risk With Respect to Credit Accumulation: by Family Income, 2004-5



j. Key Languages and At-Risk Status

- There were 21 “key” languages spoken by students in the 2004-5 Grade 9 cohorts—that is, 100 or more students in the cohort spoke them. These languages accounted for 91% of the cohort students (16,153 of 17,823). Half (50%) of the students in the cohort spoke English only.
- A fifth (20%) of students speaking English only were considered ‘at risk’ in that they had achieved fewer than 7 credits by the end of Grade 9, the same as in 2003-4.
- The language groups with the highest at-risk status in both 2004-5, as well as 2003-4 were Spanish (32%) Portuguese (28%) and Somali (24%). The proportion of at-risk students in each of these groups declined from 2003-4 to 2004-5.
- The language group with the lowest proportion of at-risk students was Korean (6%).

Table 1: Key Languages and Grade 9 At-risk Status, 2004-5 and 2003-4

Language	Number of students in the cohort	% at-risk 2004-5 (% who had achieved fewer than 7 credits)	% at-risk 2003-4
Arabic	168	9%	18%
Bengali	225	7%	10%
Chinese	2191	7%	8%
Dari	100	21%	*
English	8821	20%	20%
French	101	13%	*
Greek	145	15%	21%
Gujarati	252	8%	7%
Hindi	131	9%	7%
Korean	353	6%	4%
Persian (Farsi)	418	17%	15%
Portuguese	118	28%	35%
Punjabi	250	13%	12%
Russian	366	10%	10%
Serbian	102	10%	*
Somali	275	24%	32%
Spanish	318	32%	35%
Tagalog (Pilipino)	110	11%	*
Tamil	832	7%	9%
Urdu	614	11%	13%
Vietnamese	263	14%	16%

* Less than 100 students in the 2003-4 Grade 9 cohorts speaking this language

k. Region of Birth

Figure 13 shows the relationship between student region of birth and Grade 9 cohort students with less than 7 credits. "Region of birth" information here is reported only for regions that have 100 or more Grade 9 students.

Previous studies such as the Toronto legacy cohort studies have usually found minimal achievement differences between the general category of "students born in Canada" and "students born outside of Canada". Likewise, here, the proportion of students at-risk by credit accumulation (in having completed less than 7 credits by the end of 2004-5) was 17% for students born in Canada, and 14% for students born outside of Canada (a breakdown similar to 2003-4, where 18% of cohort students born in Canada and 15% of those born outside Canada were at-risk).

The true differences are found within groups: some students arriving in Canada do better than those born in Canada according to our academic achievement outcomes, others do worse. It is for this reason that we turn to region of birth for more detail (with over 200 countries, looking at 'country of birth' information becomes rather confusing).

Although there are always some changes, and in spite of previous issues around missing information, the general pattern here is one seen in earlier TDSB Secondary Success Indicator studies: students born in the English-speaking Caribbean, Central/South America/Mexico, and Eastern Africa tend to be more highly at-risk than the average; students born in Eastern Europe, South Asia, and Eastern Asia tend to be less highly at-risk than the average; students born in Canada tend to have average at-risk (at part because most students are born in Canada).⁴

⁴ Students from other regions may vary in their achievement patterns, or the number of students in the region is too low to report.

Figure 13: Grade 9 Cohort Students With < 7 Credits by Region of Birth, 2004-5

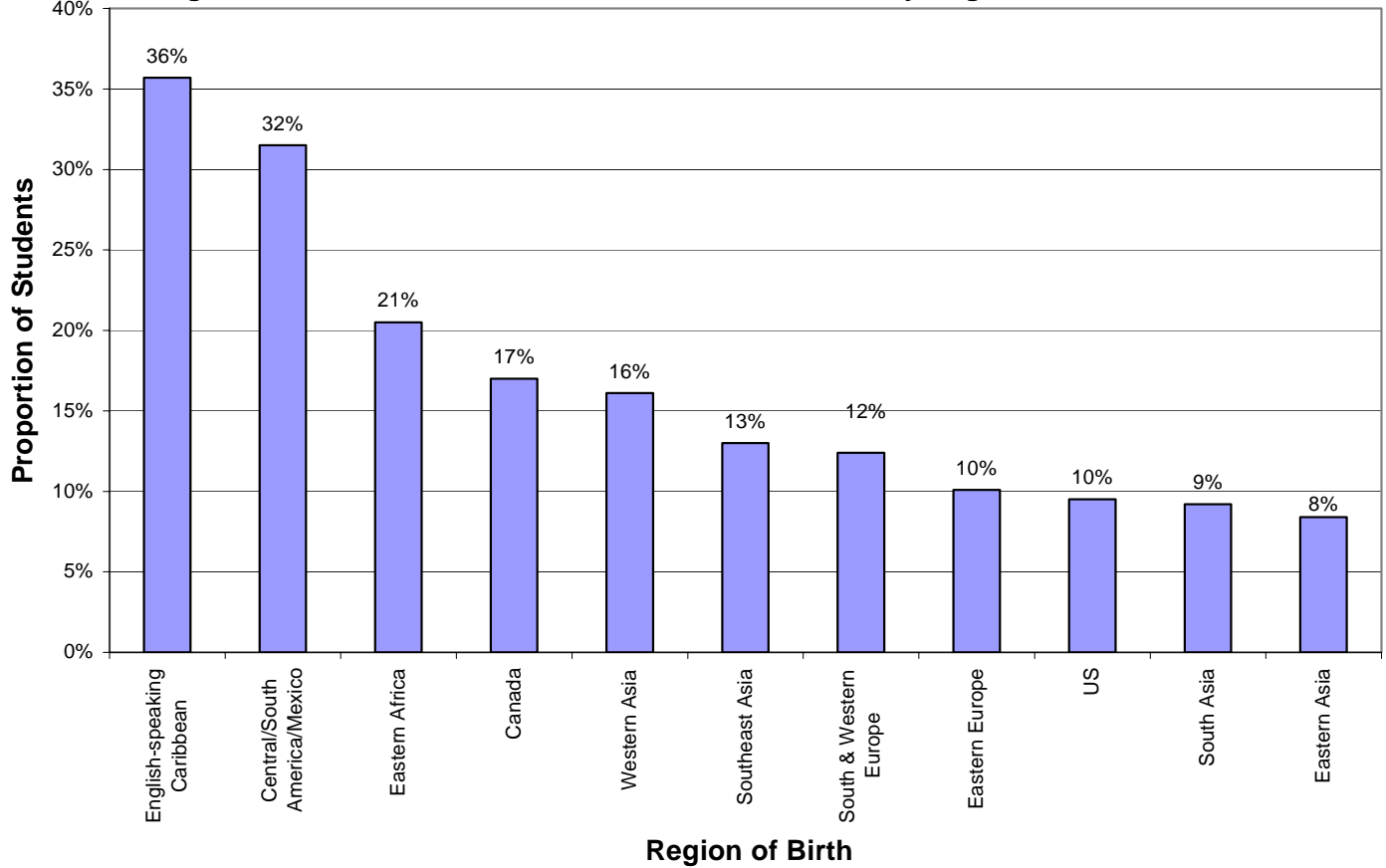
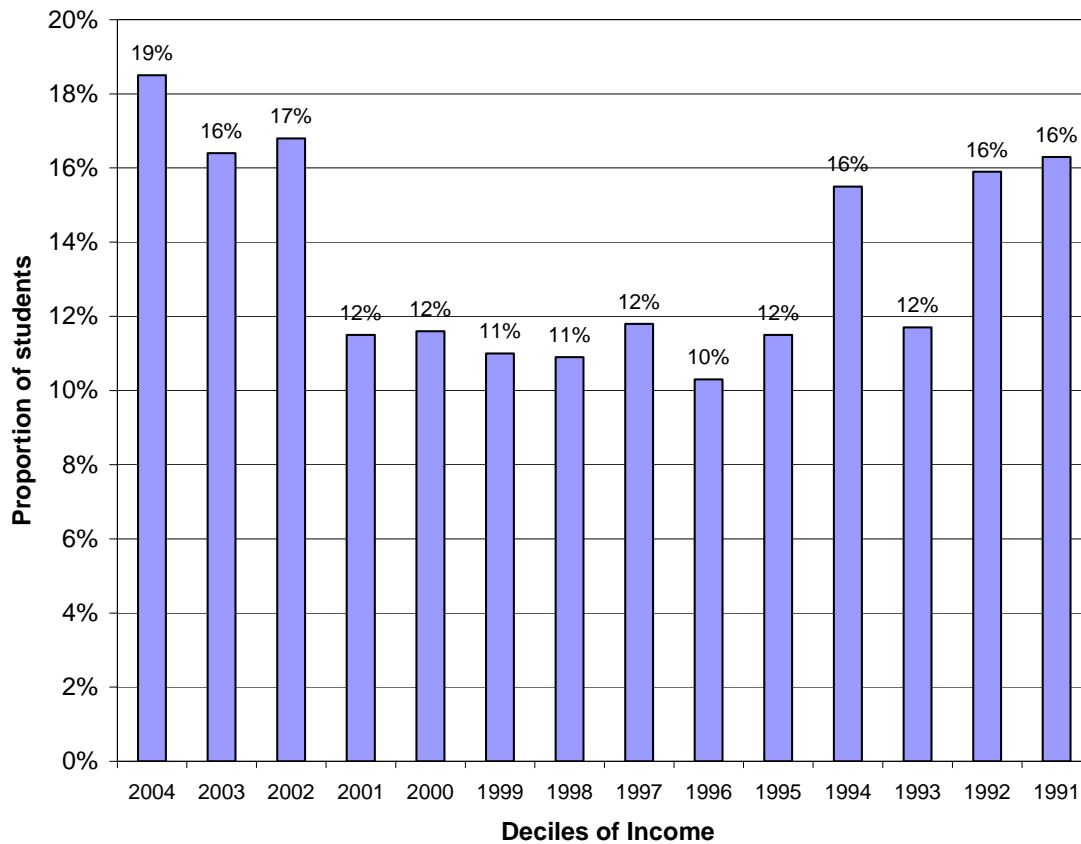
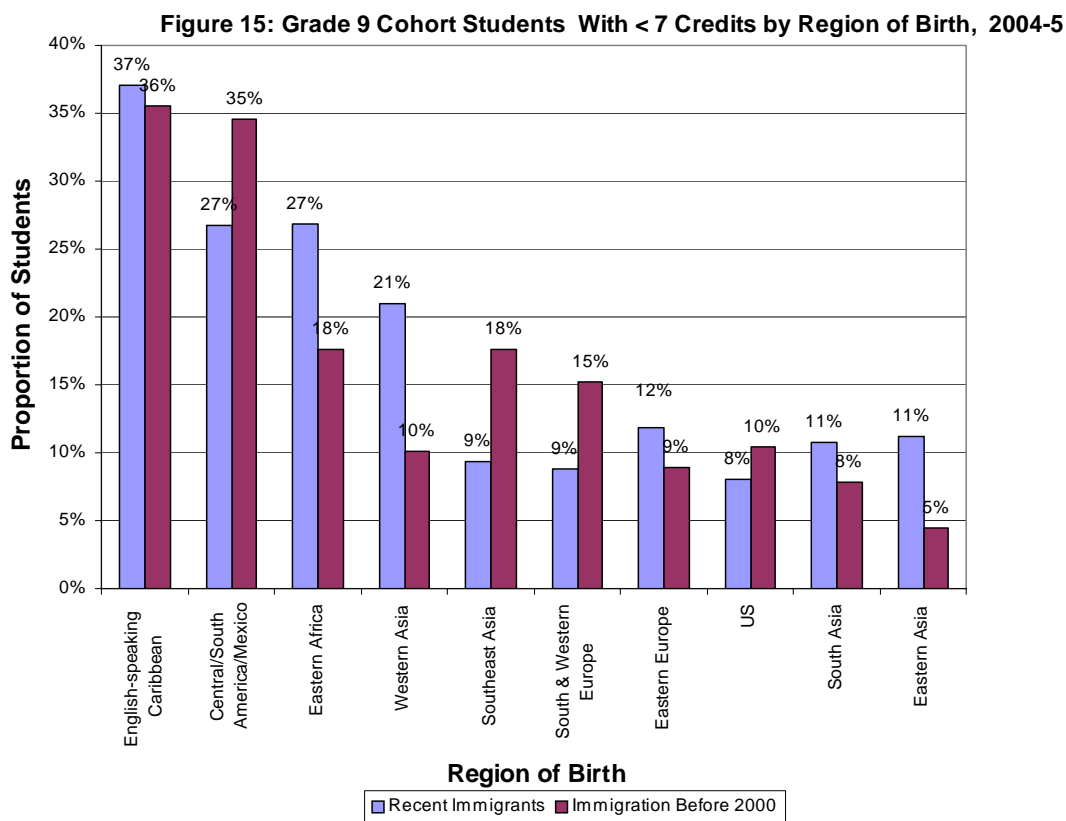


Figure 14 shows the proportion of at-risk students according to year of arrival in Canada. Note that the most recent arrivals (2002-4) had overall at-risk proportions at around the same rate as the TDSB average of 16% (16-19%), those who arrived 4-10 years earlier had somewhat lower rates (10-12%) while those who had arrived 1994, 1992 and 1991 (and whose education would be entirely in Canada) had at-risk proportions at the TDSB average. In other words, recent arrival in Canada in itself does not appear to have made a great deal of difference in the overall outcomes of these Grade 9 students.

Figure 14: Grade 9 Students At-Risk With Respect to Credit Accumulation: Year of Arrival in Canada, 2004-5



As seen in Figure 15, the date at which immigrants arrived in Canada from different regions did show a difference for some regions of birth but not for others. Students born in the English-speaking Caribbean had the same general ‘at risk’ proportions regardless of year of immigration. For some regions it would appear that recent immigrants had a higher ‘at risk’ proportion, but for others, less recent immigrants were more at risk. Again, the effect of arrival date to Canada is not as obvious, therefore, as actual region of immigration.



1. Absenteeism of Grade 9 Students and At-risk Status

- Figure 16 shows the relationship between Grade 9 absenteeism and at-risk status as measured by credit accumulation. For comparison, see Figure 17, with similar figures for absenteeism of the two previous Grade 9 cohorts. For all three cohorts, the relationship is very clear: as the absenteeism rate increases, so does the proportion of at-risk students:
- It is clear that of students who had more than 10% absenteeism (that is, absent from school more than 1 day every two weeks), around a third or more are at-risk.
- The vast majority of Grade 9 students absent from school more than a day a week (above 20% absenteeism) are at-risk.
- Beyond a certain point, the population of truant students and the at-risk population become one.

Figure 16: Grade 9 Absenteeism (September-June) and Proportion of Students With < 7 Credits 2004-5

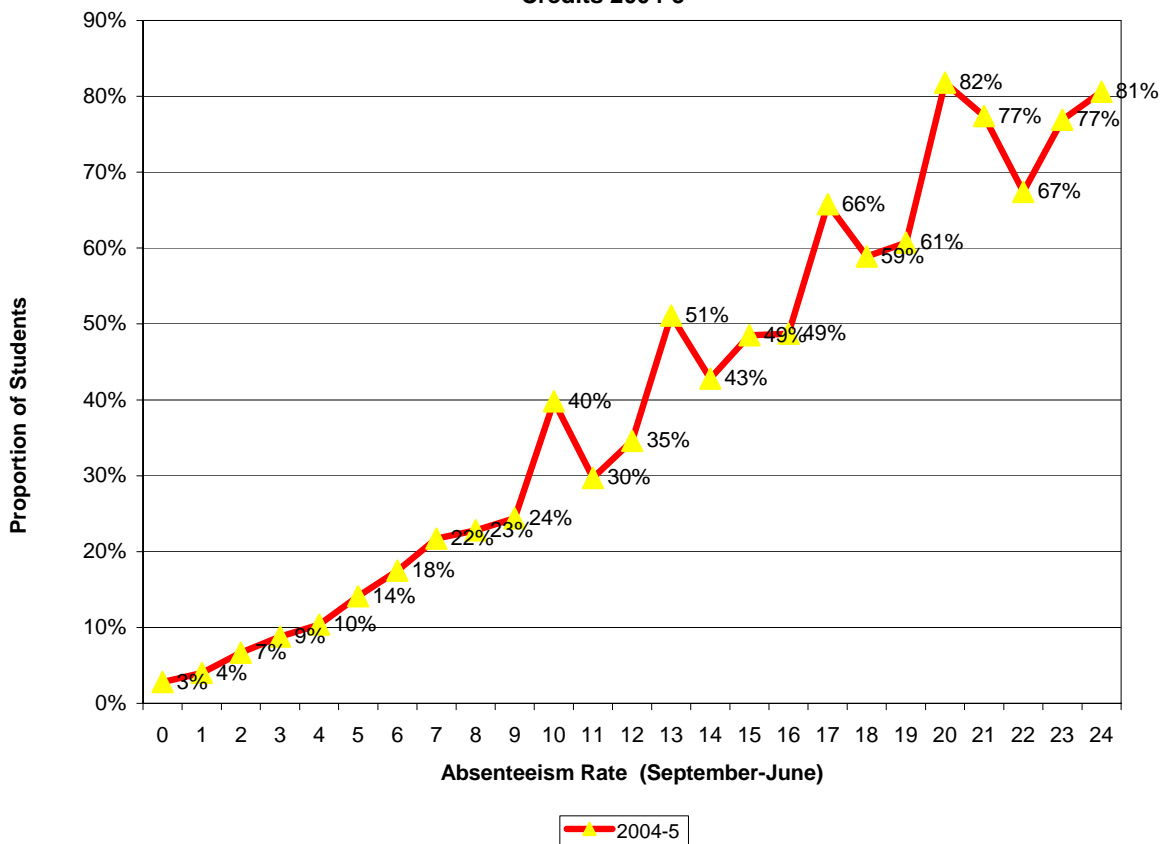
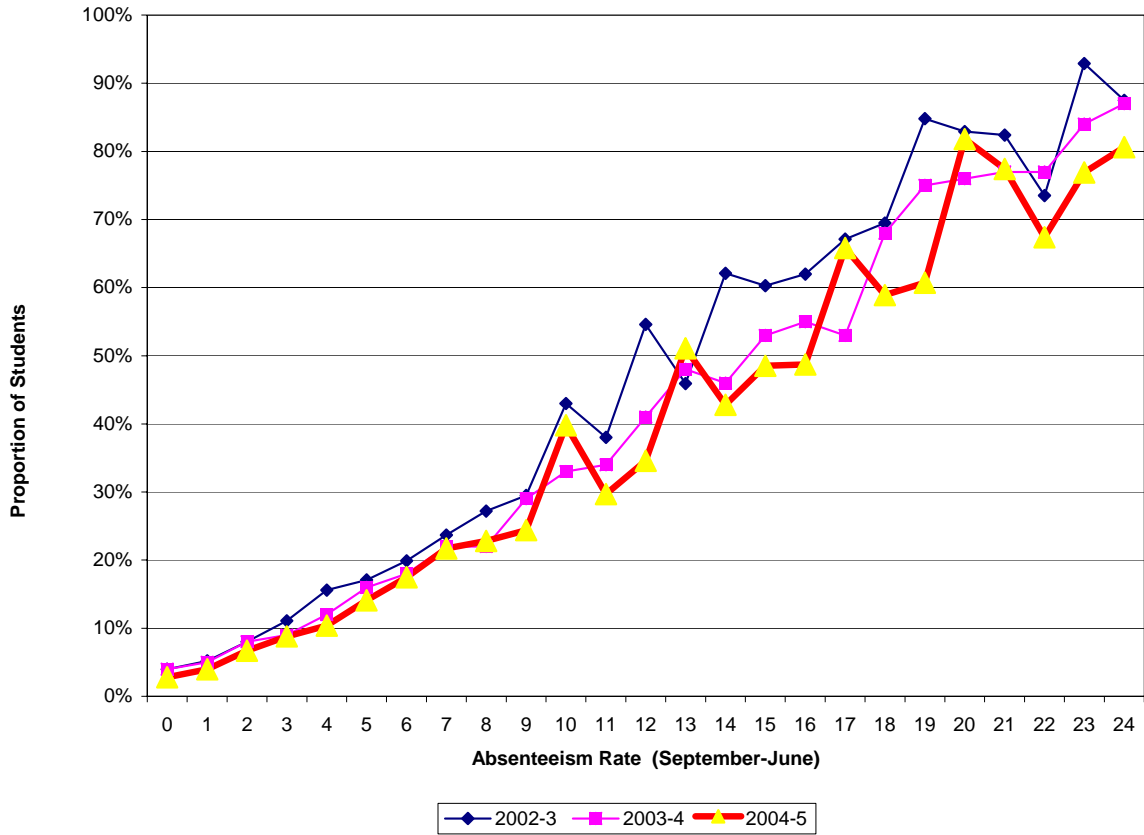


Figure 17: Grade 9 Absenteeism (September-June) and Proportion of Students With < 7 Credits 2002-3 to 2004-5



PART 3: EQAO GRADE 9 MATH: AN OVERVIEW OF 2004-5 TDSB AND EQAO STUDENT-LEVEL RESULTS

a. Matching of EQAO Math and TDSB Data for 2004-5

EQAO provided a student-level file of 19,958 students. The file was supposed to be linked by OEN. However, when a direct link with the 2004-5 demographic file was attempted, the match was 15,704 (79%).

It was found that approximately 10% of cases had no OEN. In addition, at least 12 schools had submitted Trillium ID numbers rather than OEN.

An additional set of matches were then done by Trillium ID number (for students with a missing OEN). As a third step, remaining students were matched using a unique alpha ID number.⁵

The final match was 19,333 of 19,958 in the original EQAO file, or 97%.⁶

b. Who Are the Students Taking the Grade 9 EQAO Math Test?

It is a reasonable, albeit incorrect, assumption that all students taking the Grade 9 Math test in 2004-5 were Grade 9 students. The reality is a bit more complex, reflecting the rather ambiguous intersection of how “grade” is used in the Ontario secondary panel.

There were 19,333 students who took the EQAO Grade 9 Math test, who were linked back to the 2004-5 TDSB. Of these students:

1. 16,033 (83%) were in the Grade 9 cohort of 2004-5, according to TDSB Secondary Student Success Indicators definitions. These students were defined as students between the ages of 13 and 15, who were present in both Fall 2004 and June 2005 and who, according to our best guess using student records, were new to the secondary school experience. The vast majority of these students (76%) were taking Academic level Math.

It is also useful to note that there were 1,734 students in the Grade 9 cohort who were NOT linked to EQAO Grade 9 Math results. It would appear that these

⁵ The alpha ID number was comprised of a combination of initial of first name, last name, gender, and school. For a match, the ID had to be unique in both the EQAO dataset and the complete Trillium 2004-5 dataset. Note that 3% of the EQAO dataset had missing gender information.

are students who had taken Essentials (locally-developed) Level Math over the 2004-5 school year, or had dropped Math during the regular school year and hence were not part of the EQAO sampling frame.

2. 1,469 (8%) were Grade 10 students in 2004-5, according to TDSB Secondary Student Success Indicators definitions. That is, these are students who are age-appropriate for Grade 10 (for 2004-5, born in 1989) who are not in the Grade 9 cohort and who are not, according to credit information, in Grade 11. Just as a note, the vast majority of these students (74%) were taking Applied level math. As well, 88% (1,291 students) were first-time or previously eligible to take the Ontario Secondary Student Literacy Test (OSSLT) test for Grade 10 students. It would appear that these are Grade 10 students taking their Grade 9 Math requirement, because they had either failed or dropped their Grade 9 credit in 2003-4.
3. 1,831 (9%) were neither Grade 9 cohort nor Grade 10 students. Examination of student records showed that the majority (61%) were age-appropriate for Grade 11 or Grade 12. Approximately half (46%) were first-time or previously eligible to write the OSSLT (it is probable that many also had written the OSSLT in previous years, and so were not included in the 2004-5 OSSLT information provided by EQAO). About a third (629 students, or 34%) were in Grade 9 according to student records, but had either left the TDSB between Fall 2004 and June 2005, or entered the TDSB after Fall 2004.

Therefore, it would appear that overall, 16,033 plus 629 or 16,662 of 19,333, or 86% were, by most standards, Grade 9 students, while 2,671 or 14% were, by most standards, Grade 10-12 students. *Thus, when we look at the Grade 9 EQAO results, it is important to note that almost 3,000 students in the EQAO sample are not Grade 9 students, and nearly 2,000 students who clearly are Grade 9 students are not included in the EQAO sample.*

⁶ An additional 167 students, or 1%, had multiple matches and were not used.

c. What is the Relationship of Grade 9 Math Level to Overall Program of Study?

Like “grade”, “program of study” will vary according to definition. Within the TDSB, there are three different, but concurrent, definitions of Program of Study: that of EQAO Grade 9 Math, i.e. whether the student is taking Academic or Applied Math; the Secondary Student Success Indicators, which uses the majority of all Grade 9/10 courses taken; and EQAO OSSLT (the OSSLT definition of program of study varies from year to year, and thus will not be examined here).

Table 2: Math Program of Study and TDSB Secondary SSI Program of Study

			S/SSI Program of Study			Total
			Academic	Applied	Essentials	
Math Program of Study (EQAO)	Applied Math	Count	1135	4762	108	6005
		% within Math Program of Study	18.9%	79.3%	1.8%	100.0%
		% within S/SSI Program of Study	8.2%	88.3%	85.0%	31.1%
	Academic Math	Count	12627	631	19	13277
		% within Math Program of Study	95.1%	4.8%	.1%	100.0%
		% within S/SSI Program of Study	91.8%	11.7%	15.0%	68.9%
Total	Count	13762	5393	127	19282	
	% within Math Program of Study	71.4%	28.0%	.7%	100.0%	
	% within S/SSI Program of Study	100.0%	100.0%	100.0%	100.0%	

Table 2 shows the relationship between EQAO Program of Study (for students taking the Math test) and the TDSB Program of Study for the same student (that is, the program of study according to the majority of Grade 9/10 courses taken). As seen, almost all (95%) of the students taking Academic level Math, were also considered to be Academic level students according to the majority of TDSB courses taken. Students taking Applied Math were somewhat more varied: 79% took a majority of their courses in the Applied level of study, but 19% took more Academic than Applied courses, while 2% took more Essentials/locally-developed than Applied courses. Still, in general, this shows a very close match of Math program of study with overall program of study for

Academic and Applied students (as noted, however, EQAO Math misses students taking Essentials/locally-developed courses, or those who dropped Math over the 2004-5 school year).

d. What is the Relationship of EQAO Math to Report Card Math?

Table 3 shows the relationship between Secondary Student Success Indicators Math levels for students in the Grade 9 cohort of 2004-5, and the Overall Outcome Level of the same students taking EQAO Grade 9 Math (N = 16,033). As has been seen in previous studies of EQAO and Report Card data, the relationship is fairly close but not by any means identical.

Table 3: Secondary SSI Math Levels and EQAO Grade 9 Math Levels 2004-5

			EQAO Grade 9 Math Results						Total	
			Below Level 1	Level 1	Level 2	Level 3	Level 4	No Data		Exempt
Secondary SSI Math Levels	Below Level 1	Count	503	566	242	56	0	253	28	1648
		% within SSI Levels	30.5%	34.3%	14.7%	3.4%	.0%	15.4%	1.7%	100.0%
		% within EQAO Math Results	50.3%	23.9%	7.2%	.7%	.0%	72.7%	28.9%	10.3%
	Level 1	Count	312	985	1299	903	0	42	21	3562
		% within SSI Levels	8.8%	27.7%	36.5%	25.4%	.0%	1.2%	.6%	100.0%
		% within EQAO Math Results	31.2%	41.6%	38.5%	11.5%	.0%	12.1%	21.6%	22.2%
	Level 2	Count	114	474	932	1536	2	17	15	3090
		% within SSI Levels	3.7%	15.3%	30.2%	49.7%	.1%	.6%	.5%	100.0%
		% within EQAO Math Results	11.4%	20.0%	27.6%	19.6%	.2%	4.9%	15.5%	19.3%
	Level 3	Count	57	248	609	2266	54	24	20	3278
		% within SSI Levels	1.7%	7.6%	18.6%	69.1%	1.6%	.7%	.6%	100.0%
		% within EQAO Math Results	5.7%	10.5%	18.0%	29.0%	5.3%	6.9%	20.6%	20.4%
Level 4	Count	14	94	293	3059	970	12	13	4455	
	% within SSI Levels	.3%	2.1%	6.6%	68.7%	21.8%	.3%	.3%	100.0%	
	% within EQAO Math Results	1.4%	4.0%	8.7%	39.1%	94.5%	3.4%	13.4%	27.8%	
Total	Count	1000	2367	3375	7820	1026	348	97	16033	
	% within SSI Levels	6.2%	14.8%	21.1%	48.8%	6.4%	2.2%	.6%	100.0%	
	% within EQAO Math Results	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

While only 6% of Grade 9 cohort students were at Level 4 Math according to EQAO, 28% of Cohort students were at Level 4 Math according to teacher assessments from Report Cards. Two thirds of these Level 4 Math students (by teacher assessments) were Level 3 Math (by EQAO assessment).

There appears to be a systemic difference between EQAO distributions and distributions of teacher grades. As seen in previous research (see Brown, 2004b), an examination of EQAO level distributions shows that the proportion of Level 4 students in any subject or year will rarely exceed 10%, while the proportion of students categorized as Level 4 by Report Card teacher assessment tends to be between 25 and 30%. Therefore, in general, most students categorized as Level 4 by teachers will be categorized as Level 3 by EQAO, regardless of whether the student is Grade 3, 6 or 9, or in Math, Reading or Writing. It would be worth further examination to see why this is the case.

e. Relationship of EQAO Math to Selected Variables

EQAO disaggregates the Grade 9 Math test into two groups, Academic and Applied, according to the stream of study taken by students in their Math course. This makes it difficult to see the overall picture of Math achievement. Therefore, for this analysis, we combined Academic and Applied Math results. When all students who took the EQAO Grade 9 Math test are examined as one group, a close relationship can be seen between other TDSB variables seen in the Grade 9 cohort of 2004-5 (see Parts 1 and 2).

Thus, of students in the cohort classified as “highly at risk” through completing fewer than 7 credits by the end of Grade 9, only 7% were at Level 3 in EQAO Math (regardless of program of study) and none were at Level 4. By comparison, 55% of students who had completed 7 or more credits by the end of Grade 9 were at Level 3, and 7% were at Level 4.

Figure 18: Proportion of Grade 9 Cohort Students at Levels 3 and 4 in EQAO Math, 2004-5

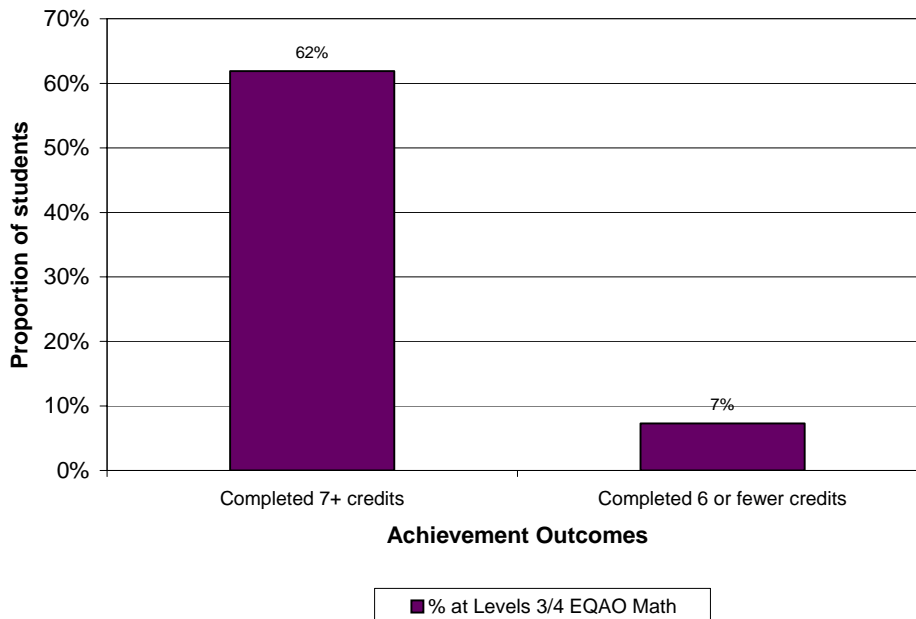


Figure 19 shows virtually the same pattern of achievement by neighbourhood income patterns as seen elsewhere (e.g., Grade 9 credit accumulation). Thus, of students participating in the EQAO Math assessment living in the lowest income neighbourhoods, 38% had achieved at Levels 3/4; of students living in the highest income neighbourhoods, 72% had achieved at Levels 3/4, almost twice the rate of the lowest-income neighbourhoods.

Figure 19: Grade 9 Students Achieving Levels 3/4 EQAO Math: by Neighbourhood Income, 2004-5

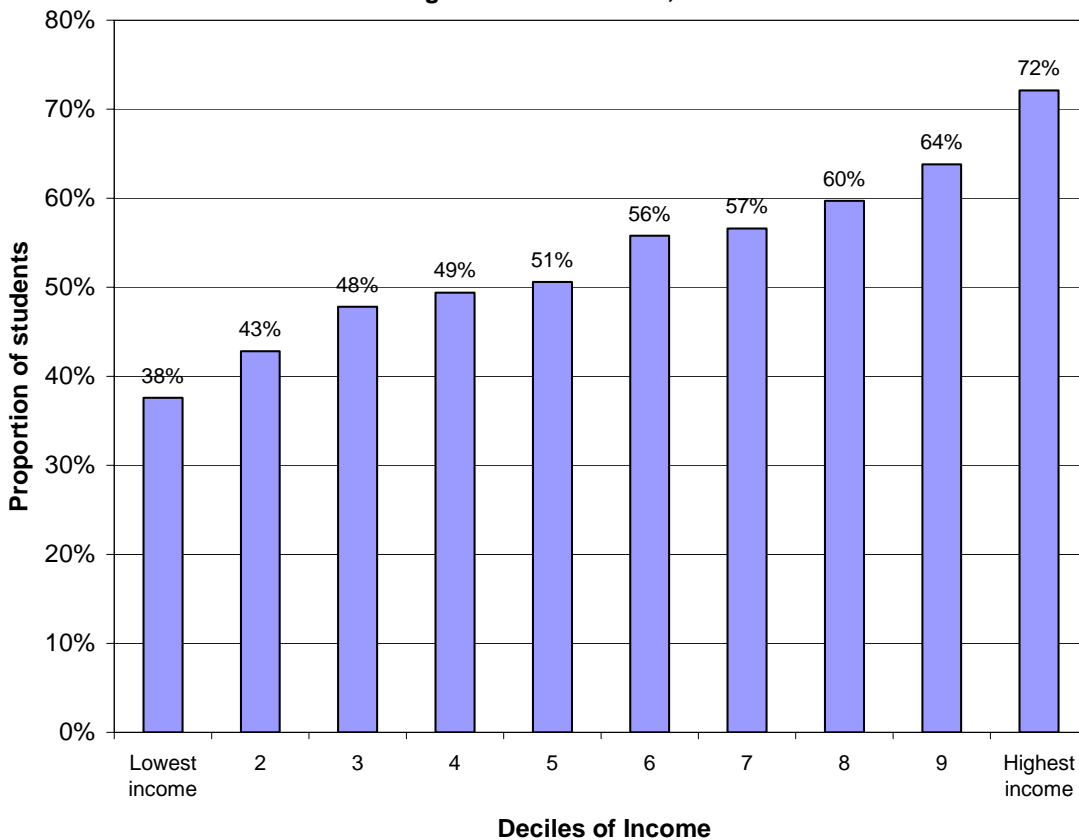
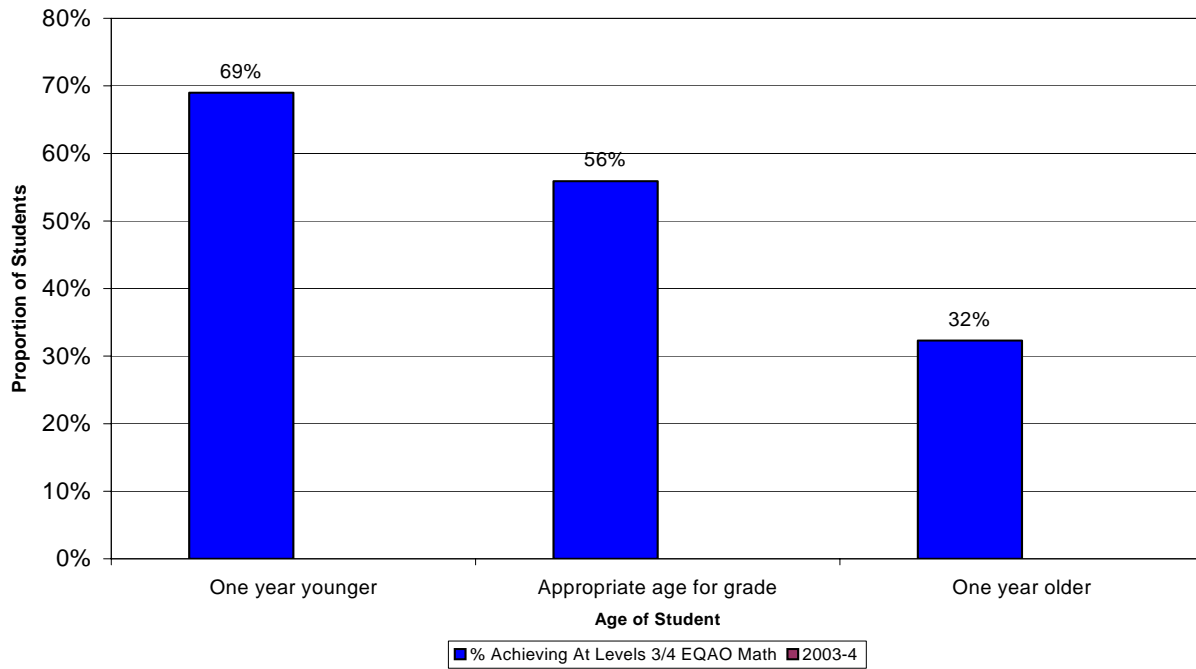


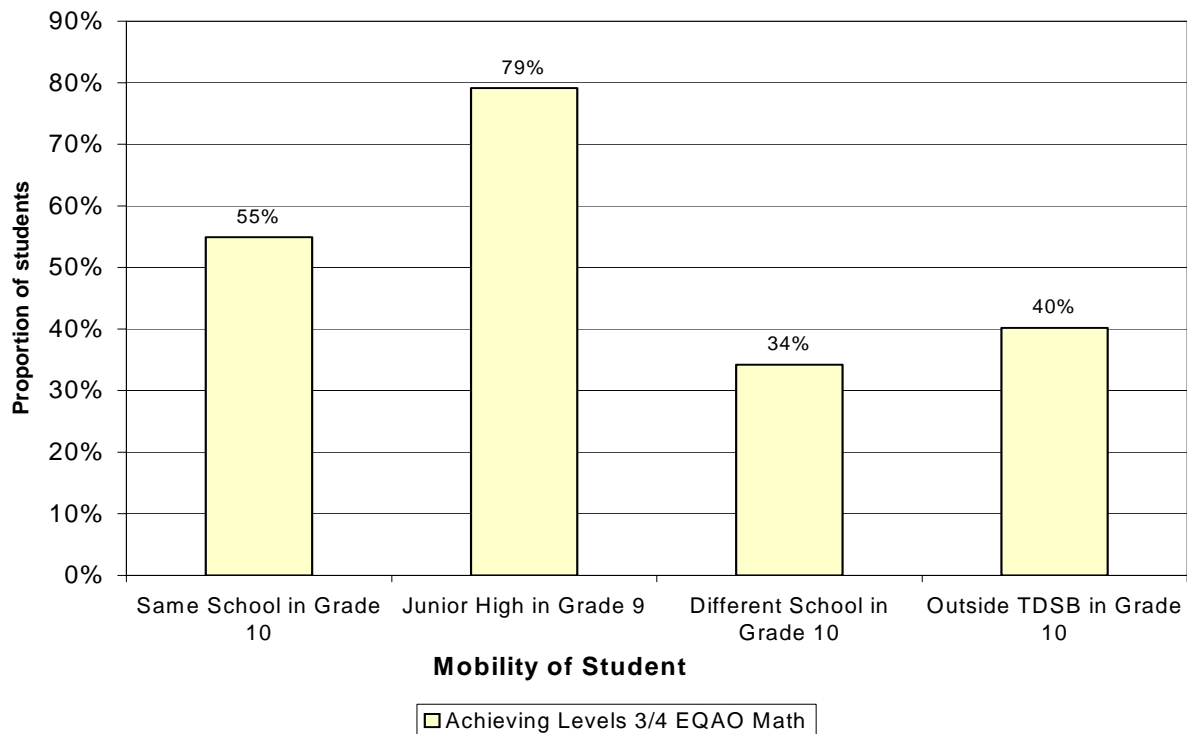
Figure 20 also shows the clear relationship of year of birth with achievement in EQAO Math: students age appropriate for Grade 9 are almost twice as likely to be achieving at Levels 3/4 than students a year older, while the comparably small number of younger students were achieving at a higher rate than the other two age groups.

Figure 20: Grade 9 Students Achieving Levels 3/4 EQAO Math: by Student Age, 2004-5



Mobility has the same relationship with EQAO Grade 9 performance as seen with Grade 9 credit accumulation. Students who switched secondary schools in ‘unscheduled’ ways—transferring to other schools outside the TDSB, or from school to school within the TDSB—were less likely to have achieved at Levels 3/4 in Math than students who stayed in the same school (34% and 40% versus 55%). However, students who transferred from Junior High Schools to Grade 10 secondary schools had the highest achievement level (79%), showing that movement from one school to another does not in itself cause at-risk status.

Figure 21: Achieving Levels 3/4 EQAO Math and Mobility Between Grade 9 and Grade 10, 2004-5



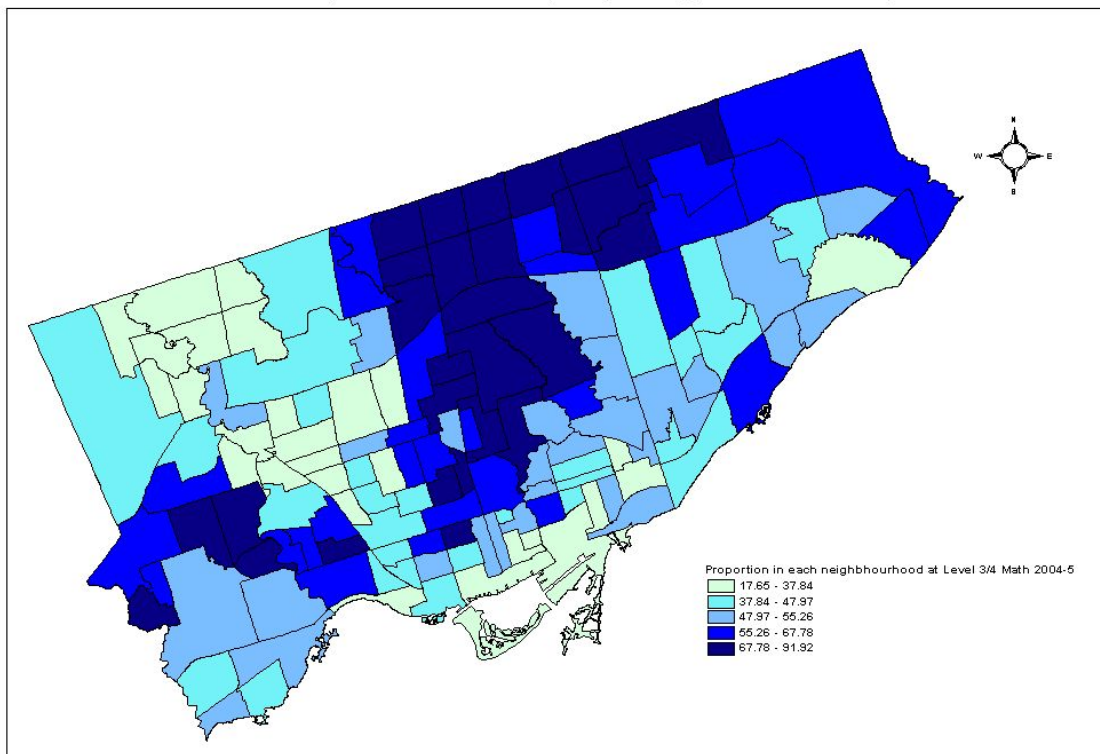
f. City Neighbourhoods and Achieving Levels 3/4, 2004-5

Map 1 illustrates the proportion of students in the Grade 9 cohort who participated in the EQAO Grade 9 Math assessment, according to City of Toronto neighbourhood. These neighbourhoods were developed by the City of Toronto’s Community and Neighbourhoods Department, and are based on Statistics Canada census tracts. There are 140 neighbourhoods defined through this process. They are being used by government, academic and community agencies for planning, including the City, University of Toronto, St. Christopher House, and the United Way of Greater Toronto.

The neighbourhood for each Grade 9 cohort student participating in the EQAO Math assessment was located using the postal code of student residence and matching it to the local census tract, and then to the neighbourhood based on census tract.

The proportion of students at Levels 3/4 was determined using the methodology of the previous section, i.e. by the number of students in the neighbourhood achieving at Levels 3 or 4, out of all Grade 9 cohort students participating in the assessment.

Map 1: Proportion of Grade 9 Cohort Students at Levels 3/4 in EQAO Math, TDSB 2004-5 (City Neighbourhoods)



Source: Organizational Development/Research and Information Services, TDSB; City of Toronto; EQAO; Statistics Canada.
Base Map: Toronto Land Information Services

For more detail on City of Toronto neighbourhoods, see:

http://www.city.toronto.on.ca/demographics/neighbourhood_profiles.htm

The following neighbourhoods had fewer than a third of participating students in the Grade 9 cohort achieving at Levels 3/4 in the Grade 9 Math assessment:

- Moss Park;
- Elms-Old Rexdale;
- Beechborough-Greenbrook;
- Rustic;
- Thistletown-Beaumont Heights;
- Glenfield-Jane Heights
- Mount Dennis;
- Regent Park; and
- Humber Summit.

The following neighbourhoods had 75% or more of participating students in the Grade 9 cohort achieving at Levels 3/4 in the Grade 9 Math assessment:

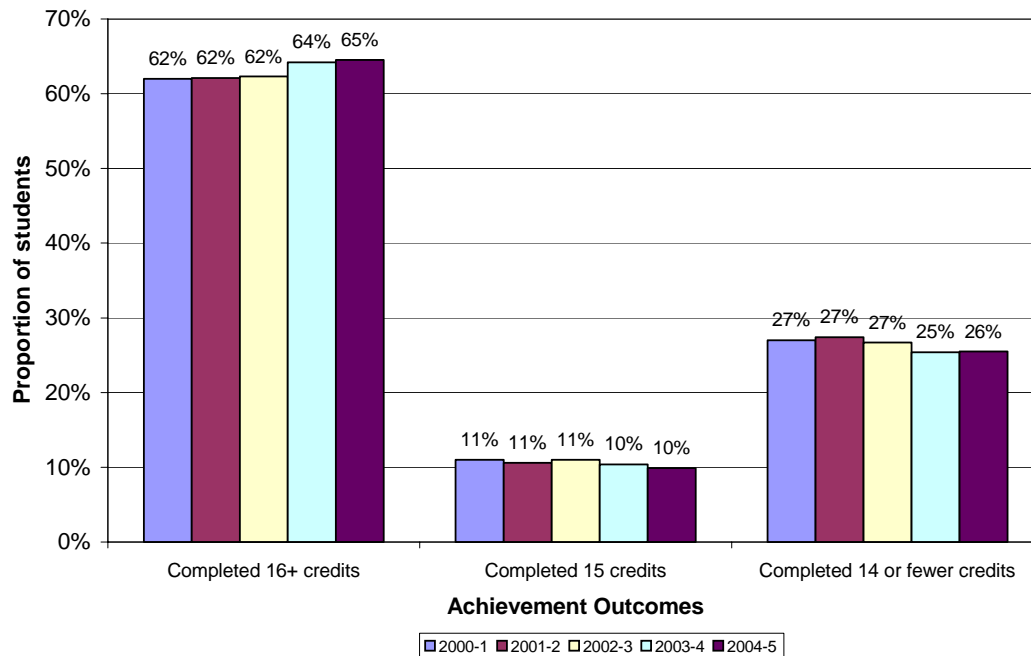
- University;
- Yonge-St.Clair;
- Lawrence Park South;
- Willowdale East;
- Newtonbrook West;
- Milliken;
- Newtonbrook East;
- Edenbridge-Humber Valley;
- Banbury-Don Mills;
- Bridle Path-Sunnybrooke;
- Lansing-Westgate;
- Pleasant View;
- Leaside-Bennington;

- St.Andrew-Windfields;
- Bayview Woods-Steeles; and
- Hillcrest Village.

Part 4: CREDIT ACCUMULATION OF GRADE 10 STUDENTS TO THE END OF THE 2004-5 SCHOOL YEAR

- As noted in the sections on Grade 9 credits, previous TDSB studies found that achievement patterns in Grades 9 and 10 tend to be very powerful predictors of students' subsequent secondary school performance. Cohort studies in the past have found that if students complete 16 credits by the end of Grade 10, they are highly likely to graduate within the expected timeframe of five years. If they have 14 or fewer credits, they are much less likely to graduate within this time.⁷
- The rate of credit accumulation by Grade 10 students is increasing marginally. 65% of all Grade 10 students had completed 16 or more credits, compared with 62% in 2000-2001.

**Figure 22 Credit Accumulation of Grade 10 Students:
2000-1 Through 2004-5**

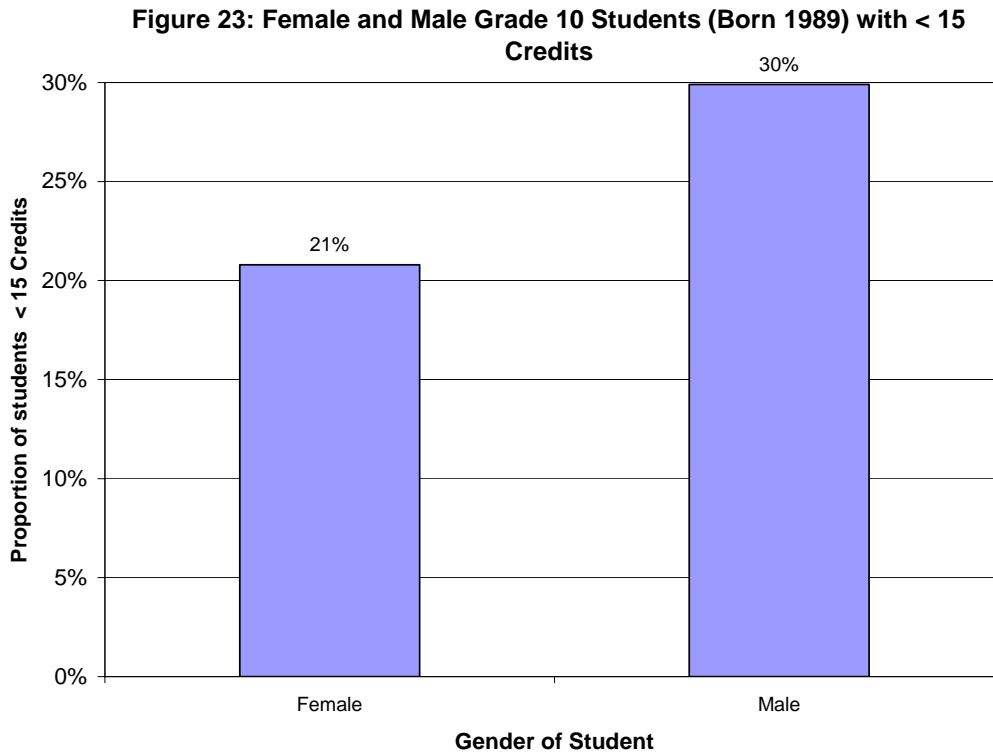


⁷ Grade 10 students are defined as 15 year olds (born in 1989) who were not in the Grade 9 cohort, and did not appear to be in Grade 11 according to student records. These students were present at the beginning and end of the school year (Fall 2004 and June 2005). While the OSS curriculum had a “predicted” outcome of four years, it has been verified that, as with the previous OS:IS curriculum, it takes up to five years for 92% of students to graduate or drop out.

Gender, region of birth and absenteeism, looked at in the credit accumulation patterns of the Grade 9 cohort, were likewise examined here.

a. Gender

- 30% of males have less than 15 credits by the end of Grade 10, versus 21% of females.

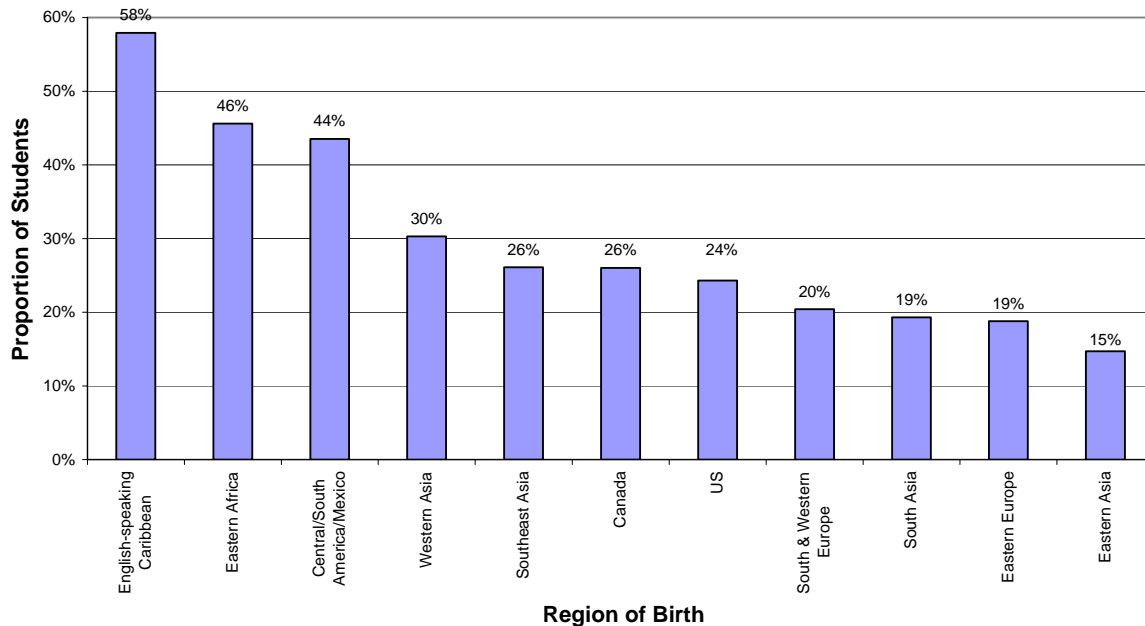


b. Region of Birth

Figure 24 shows the relationship between student region of birth and Grade 10 students with less than 15 credits. "Region of birth" information here is reported only for regions that have 100 or more Grade 10 students.

The proportion of Grade 10 students at-risk by credit accumulation (in having completed less than 15 credits by the end of 2004-5) was 26% for students born in Canada, and 25% for students born outside of Canada (this proportion was unchanged from 2003-4). As seen above with Grade 9 cohort students, the key differences are found within groups: some students arriving in Canada do better than those born in Canada according to our academic achievement outcomes, others do worse. Here, students born in the English-speaking Caribbean, Eastern Africa, and Central/South America/Mexico tend to be more highly at-risk than the average; students born in South Asia, Eastern Europe, and Eastern Asia tend to be less highly at-risk than the average; students born in Canada tend to have at-risk proportions at the same rate as the total population (at part because most students are born in Canada).⁸

Figure 24: Grade 10 Students With < 15 Credits by Region of Birth, 2004-5

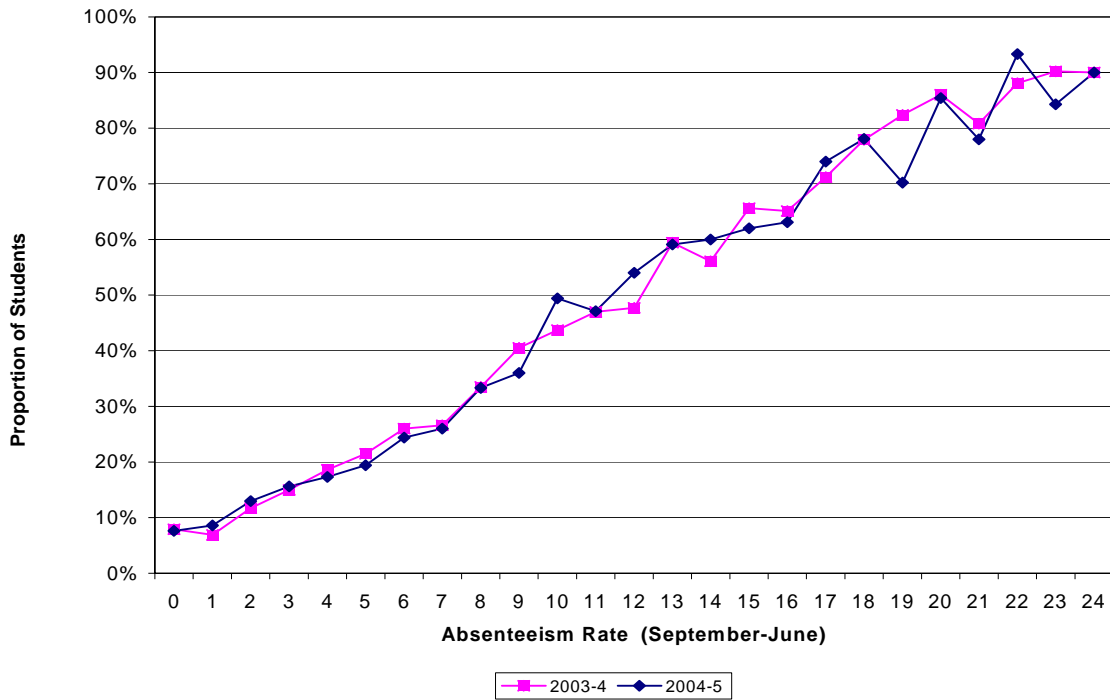


⁸ Students from other regions may vary in their achievement patterns, or the number of students in the region is too low to report.

c. Absenteeism of Grade 10 Students and At-risk Status

- If a Grade 10 student is absent for more than 10% of the time (more than half a day a week) chances are the student will have completed 14 or fewer credits by the end of Grade 10, making him/her highly at-risk. As Figure 25 shows, the relationship between Grade 10 absenteeism and at-risk status is very similar over the two most recent school years.

Figure 25: Grade 10 Absenteeism (September-June) and Proportion of Students With < 15 Credits



PART 5: COMPLETION OF THE LITERACY REQUIREMENT (OSSLT/OLC) GRADES 10-12

Outline of OSSLT Administration and Methodology

In Fall 2000, EQAO (the Ontario provincial testing authority) first administered the Ontario Secondary School Literacy Test (OSSLT) as a pilot. The OSSLT had a reading and a writing component; to pass the student needed to successfully complete both components. The second administration in February 2002 was intended to serve as a prerequisite for secondary school graduation; those students would have finished Year 5 (Grade 12 Year 2, or the second year of Grade 12) by August of 2005.

Since the original administration, the test has been modified in many different ways. Students could take the test multiple times, and if they passed one component (reading or writing) in one sitting, they needed only to complete the second component at a subsequent sitting to pass. Starting in Fall 2003, a literacy course (the OLC) was offered as an alternative to taking the test a second or third time (the requirements and composition of the OLC have changed over the past two years). Starting in Fall 2004, the composition and marking of the OSSLT has changed again—for example, the reading and writing sections have been eliminated as independent components.

With the Fall 2002 administration, release of the test information has been divided into two sections: “first time eligible” and “previously eligible” students. First time eligible students are those considered to be in their second year of secondary school, writing the test for the first time; “previously eligible” students are those who had been eligible in one or more previous administrations of the test, but had failed the test, been absent, or had been deferred.

Results for the test are usually expressed at the publicly released board and school level in what is called “Method 2”—the proportion of students passing both the reading and writing components of the test, out of all students who took the test. Also released (but less emphasized) are “Method 1” results—the proportion of students who passed both the reading and writing components, out of all students who should have taken the test. This second part includes students who were “deferred” from writing until a later

date, and those who should have written, but were absent from one or both days of the test.

In the Fall 2004 administration of the test, 76% of TDSB first-time eligible students passed according to Method 2 (those who passed out of those who wrote the test), while 64% of TDSB first-time eligible students passed according to Method 1 (those who passed out of all first-time eligible students).⁹

There are reasons that the official EQAO board results of FTE students using Method 2, while useful, is not the complete picture:

- More recent research has found that the students removed from the calculation of Method 2 (students absent from the administration of the test, and those deferred) tend to be more at-risk than many students who wrote the test and failed; Method 2 therefore gives an overly optimistic overview of total student success (see Brown, 2005a).
- In addition, it appears that 7% of students classified as “First-time eligible” in the October 2004 administration (1,532 of 22,975) had actually been considered first-time eligible in the previous 2002-2004 administrations. Many of these students had been deferred or absent in previous administrations of the test, or had been unsuccessful in writing the test and then changed schools or boards.
- There are now multiple sources of literacy completion in any given school year. Board SIS systems are the best source for completion of the OLC.

Therefore the TDSB is compiling OSSLT/OLC results through multiple sources, most importantly 1) student-level results provided through EQAO; 2) Literacy requirement completion status as collected by schools in the Trillium system; and 3) results of students taking the OLC. This is then matched to the Success Indicators datasets. Given some of the issues outlined above, the best overall measure of TDSB success in attaining literacy requirements may be the combination of annual outcomes as

⁹ A small number are also “exempt” because they are not intended to graduate with a secondary diploma. In the TDSB this number has usually been around 150 students per year.

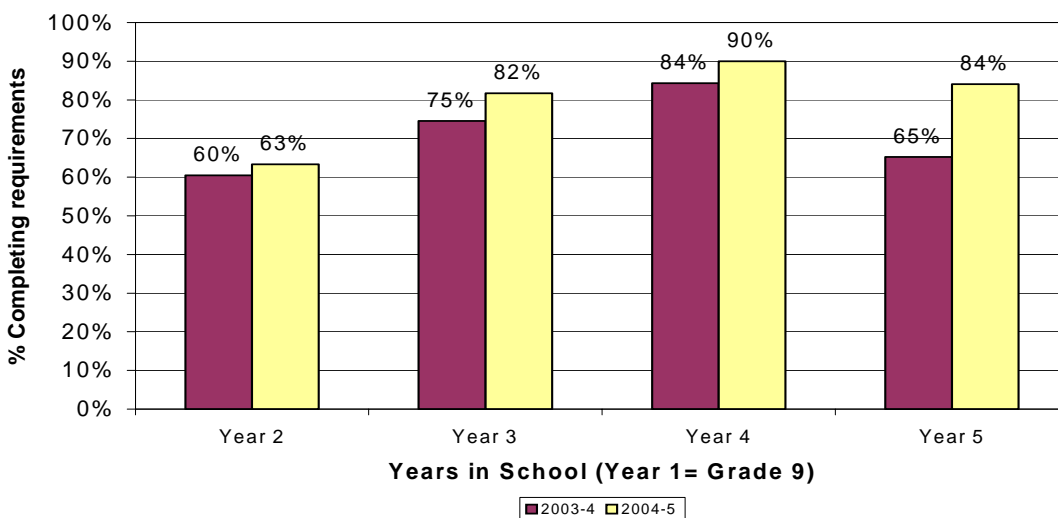
defined through the Secondary Success Indicators reports, coupled with cohort studies (reports on the Grade 9 cohort of Fall 2000, and the Grade 9 cohort of Fall 2002, will be released in April 2006).

a. Completion of the Literacy Requirement, Grades 10-12 (Years 2-5): TDSB Students as of June 2005

Figure 26 looks at the proportion of Grades 10-12 students completing their literacy requirements, through years of secondary study. This has as its base the 83,277 secondary students attending the TDSB on June 2005, the conclusion of the regular school year. For Figure 26, students in Year 1 (Grade 9) have been removed, since they did not write the OSSLT.¹⁰

By Summer 2005, 63% of students in Year 2 (Grade 10) had completed their literacy requirements, nearly all through passing the OSSLT. By Year 3 (Grade 11) over 80% of students had completed these requirements and by Year 4 (Grade 12) 90% of students had completed the requirements.

Figure 26: Completion of the Literacy Requirement, Grades 10-12 (Years 2-5): TDSB Students 2003-4 and 2004-5

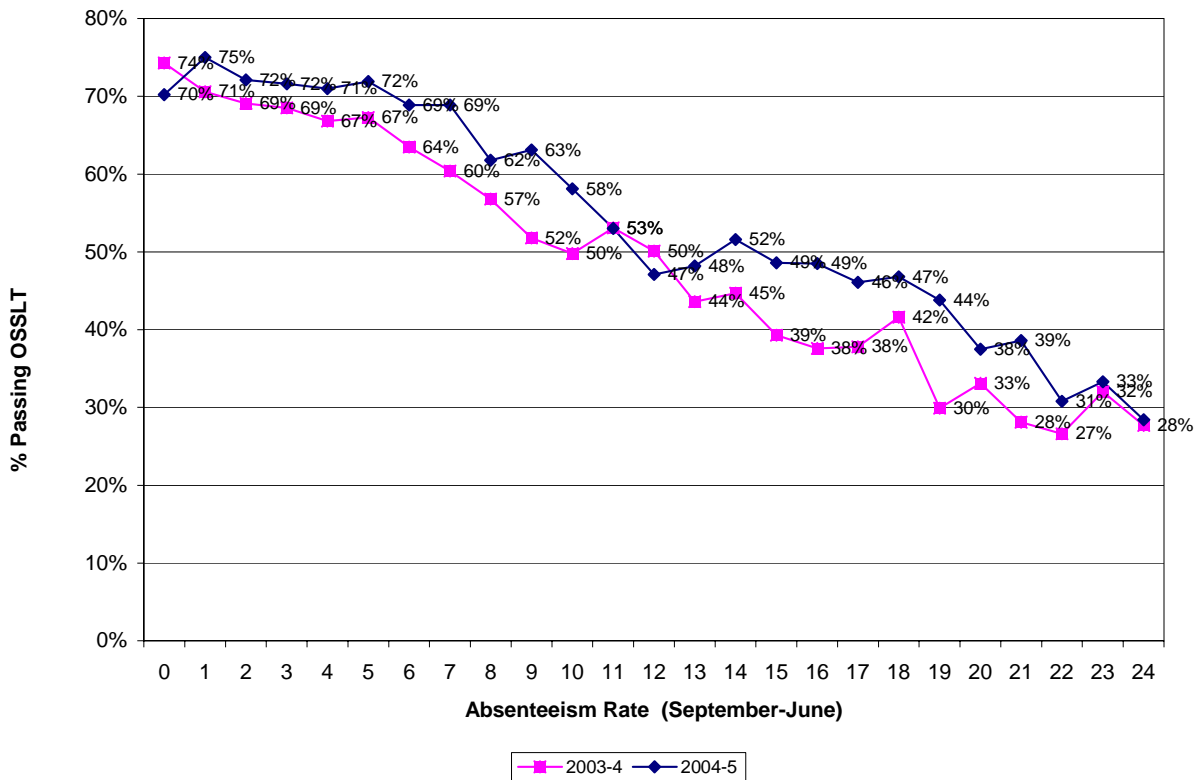


¹⁰ Years in school was calculated through the Trillium Years in School field, supplemented through information from the TDSB Grade 9 cohort studies (2000-2005) and EQAO OSSLT data for 2003-4 and 2004-5. The proportion of Year 5 students in 2003-4 completing the Literacy Requirement was much lower than 2004-5 because the literary requirement was voluntary for that cohort of students.

b. Absenteeism and Passing the OSSLT, 2004-5

The close relationship between absenteeism and achievement documented elsewhere can also be seen in looking at the proportion of first-time eligible students passing the OSSLT in both the October 2004 and the previous October 2003 administration. The vast majority of students with low absenteeism (0-5% of school days missed) passed the OSSLT on their first try; only around half of students with 10% absenteeism (1/2 day a week) passed the OSSLT; whereas only a minority of students with high absenteeism (20% or more, or a day of school or more a week) passed their OSSLT on the first try.

Figure 27: Absenteeism (September-June) and Proportion of FTE Students Passing the OSSLT

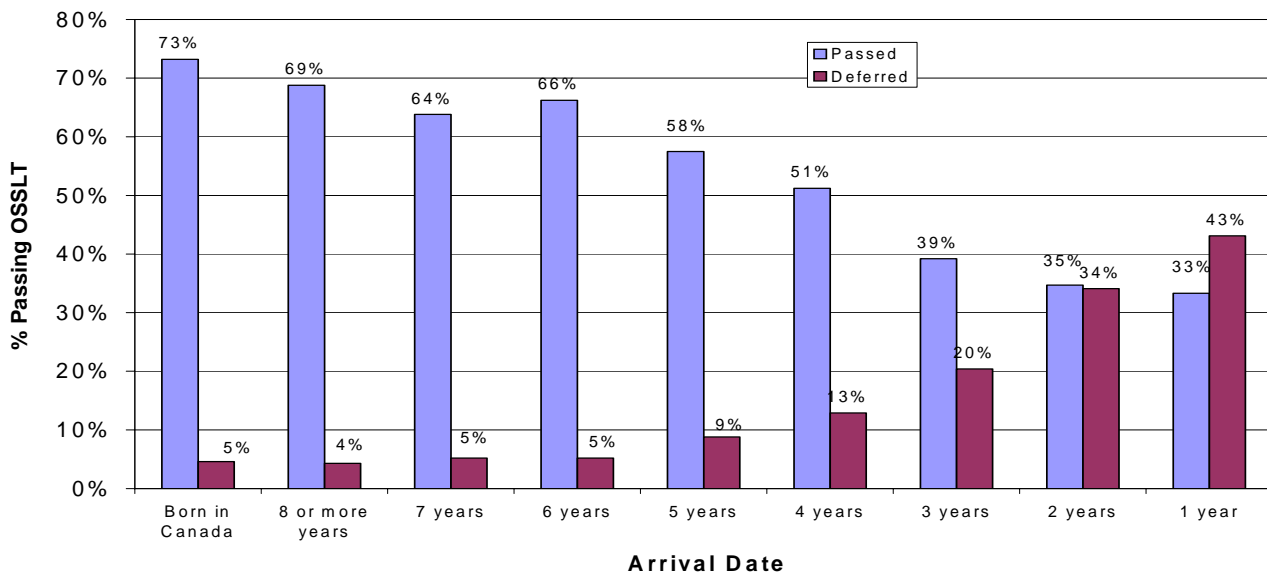


c. Recent Immigration and Passing the OSSLT, 2004-5

The following figure shows the proportion of TDSB students passing the OSSLT, who wrote in October 2004. It gives the proportion of students who were deferred, and the proportion that passed, according to year of arrival in Canada. Outcomes of students born in Canada are on the left hand side; students who arrived in Canada 8 years or more are to the right of students born in Canada; while very recent arrivals who had arrived in Canada one year or less are on the extreme right.

The majority of recent arrivals who actually wrote the test passed, but the difference is in the proportion of students who were deferred. The decision to defer taking the OSSLT in Grade 10 is made by teachers, students and parents if it is thought that the student is best served through additional instruction over the year, and then writing at the beginning of Grade 11. Forty-three percent of most recent (1 year) arrivals were deferred and around a third of 2 year arrivals were deferred. After about 5 years in Canada, the difference in deferment between students born in Canada and those born outside Canada becomes minor. It is usually thought that it takes 5-7 years for students to achieve complete proficiency in English; the pattern of OSSLT seems to reflect this.

Figure 28: Proportion of Students Passing the OSSLT and Year of Arrival in Canada

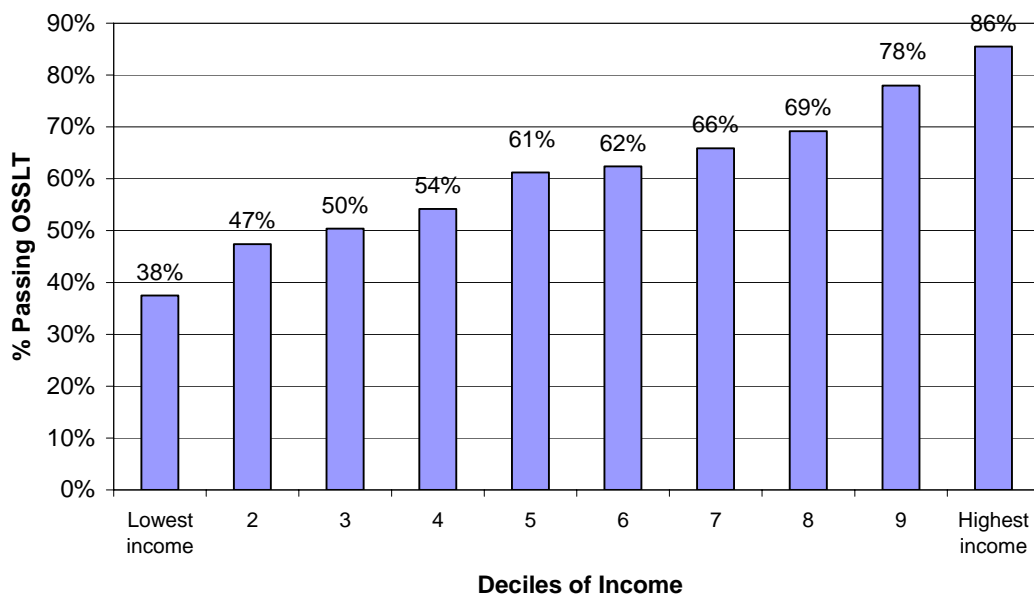


d. Neighbourhood Income and OSSLT Results: 2000-1 to 2004-5

Figures 29 to 33 show the relationship of passing the OSSLT (Method 1) with neighbourhood income. The first five offerings of the OSSLT (including the pilot) are included. In each case, the postal code of student residence was matched with average family income of the student neighbourhood.¹¹ Students were then grouped into ten groups, from the lowest 10% of neighbourhood income to the highest. In each case, the majority of first-time eligible students from the lowest income neighbourhoods did not successfully complete the OSSLT, while the majority of first-time eligible students from the highest income neighbourhoods did complete the OSSLT.

The consensus among researchers is that income in itself tends to serve as a proxy for other, more powerful socio-economic influences, such as parental occupation and

Figure 29: Proportion of Students Passing the Pilot OSSLT: Fall 2000



¹¹For OSSLT results of Fall 2000, February 2002, and October 2002, student postal code was matched to average family income of the Enumeration Area (the micro-neighbourhood in which the student lived) of the 1996 Census; for October 2003 and October 2004, postal code was matched to average family income of the Dissemination Area (which replaced the Enumeration Area) of the 2001 Census.

education. In other words, if we actually had information on parental occupation and education, the influence of income as a variable would be much less important. As such, neighbourhood income can be interpreted as a proxy variable for other aspects of socio-economic status.

Figure 30: Proportion of Students Passing the OSSLT First Administration (February 2002)

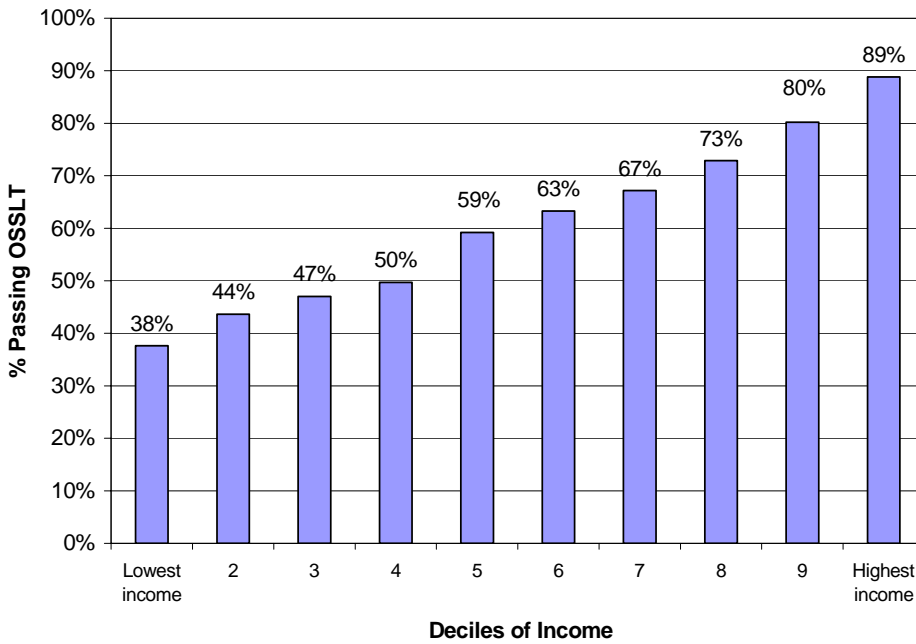


Figure 31: Proportion of Students Passing the OSSLT Second Administration (October 2002)

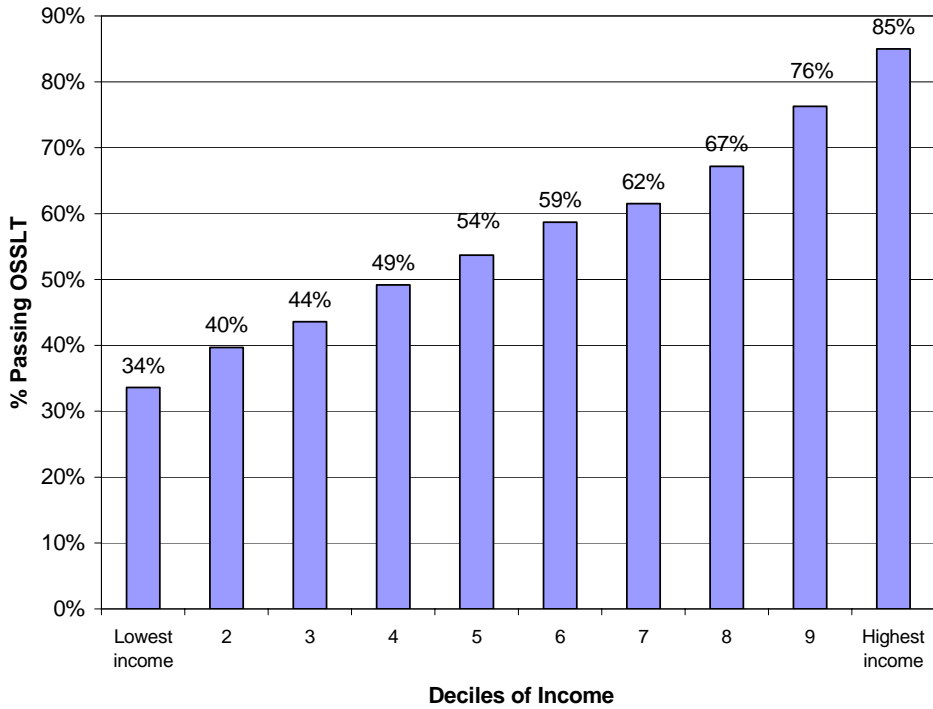
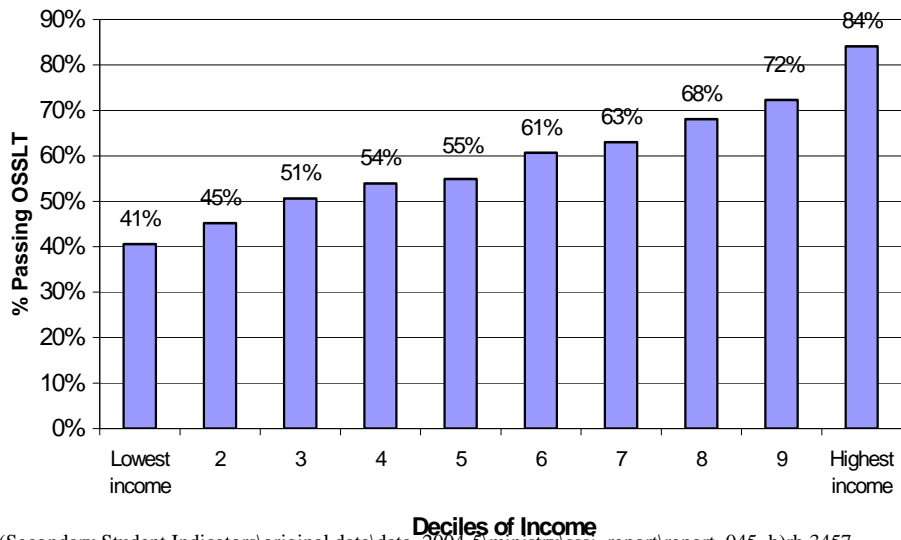
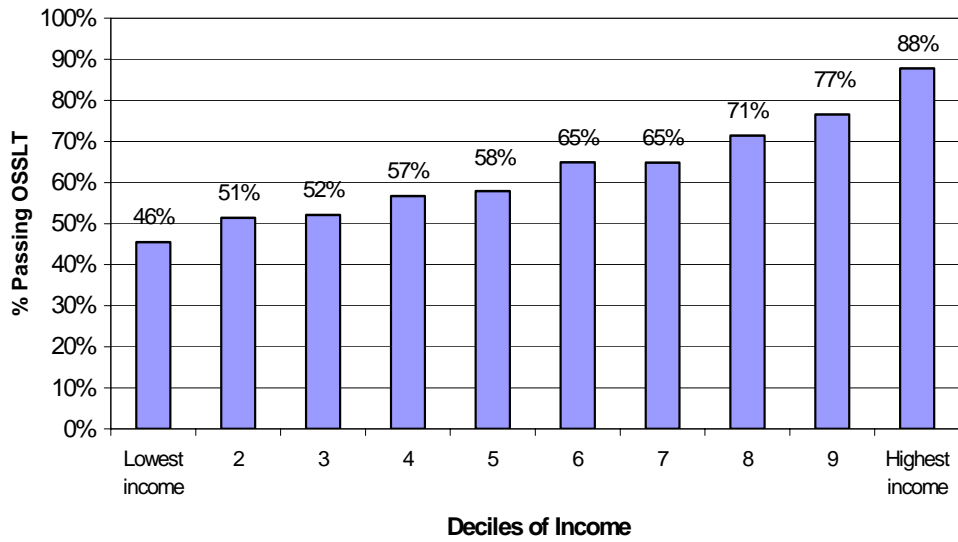


Figure 32: Proportion of Students Passing the OSSLT Third Administration (October 2003)



**Figure 33: Proportion of Students Passing the OSSLT
Fourth Administration (October 2004)**

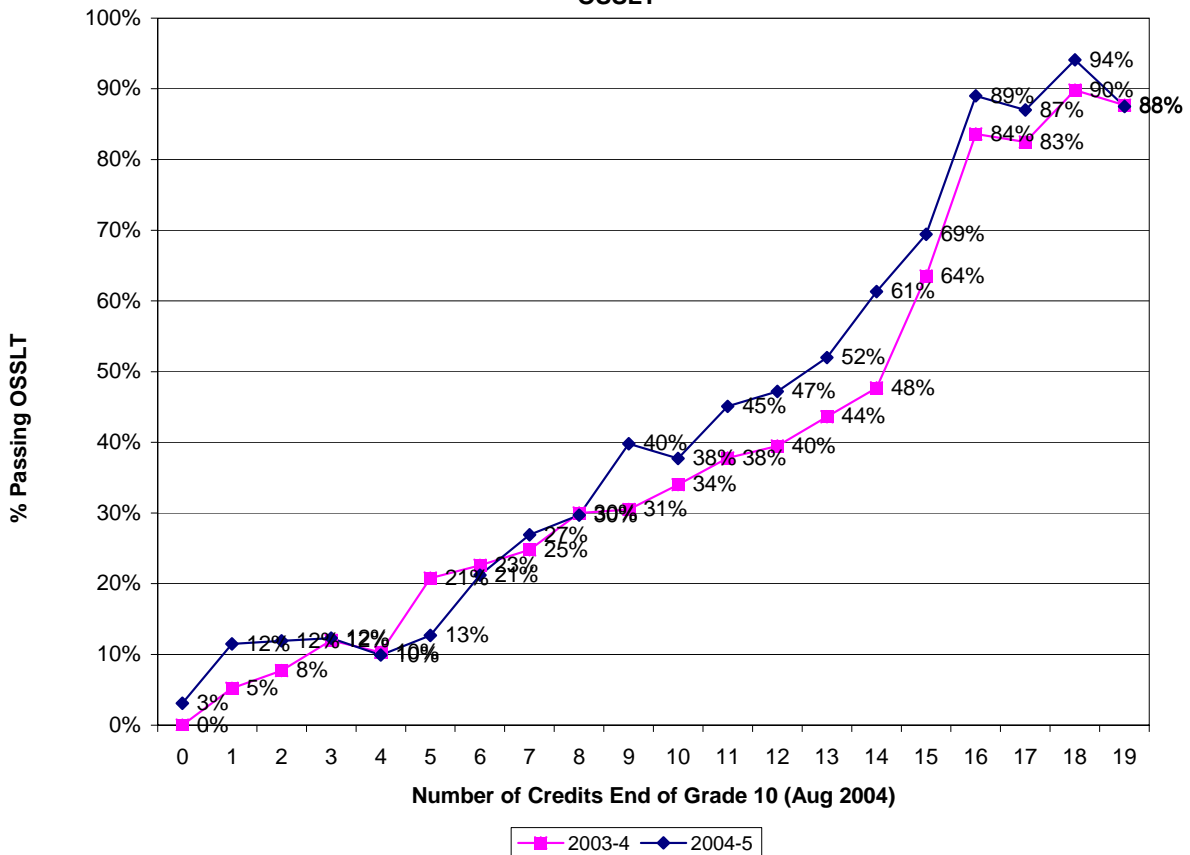


e. Credit Accumulation to the End of Grade 10 and Passing the OSSLT, 2003-4

As noted earlier, many students considered to be “first-time eligible” for writing the OSSLT in Fall 2004 were not in Grade 10, using a strict definition of age-appropriateness; however, a majority (16,540 students, or 72%) were.

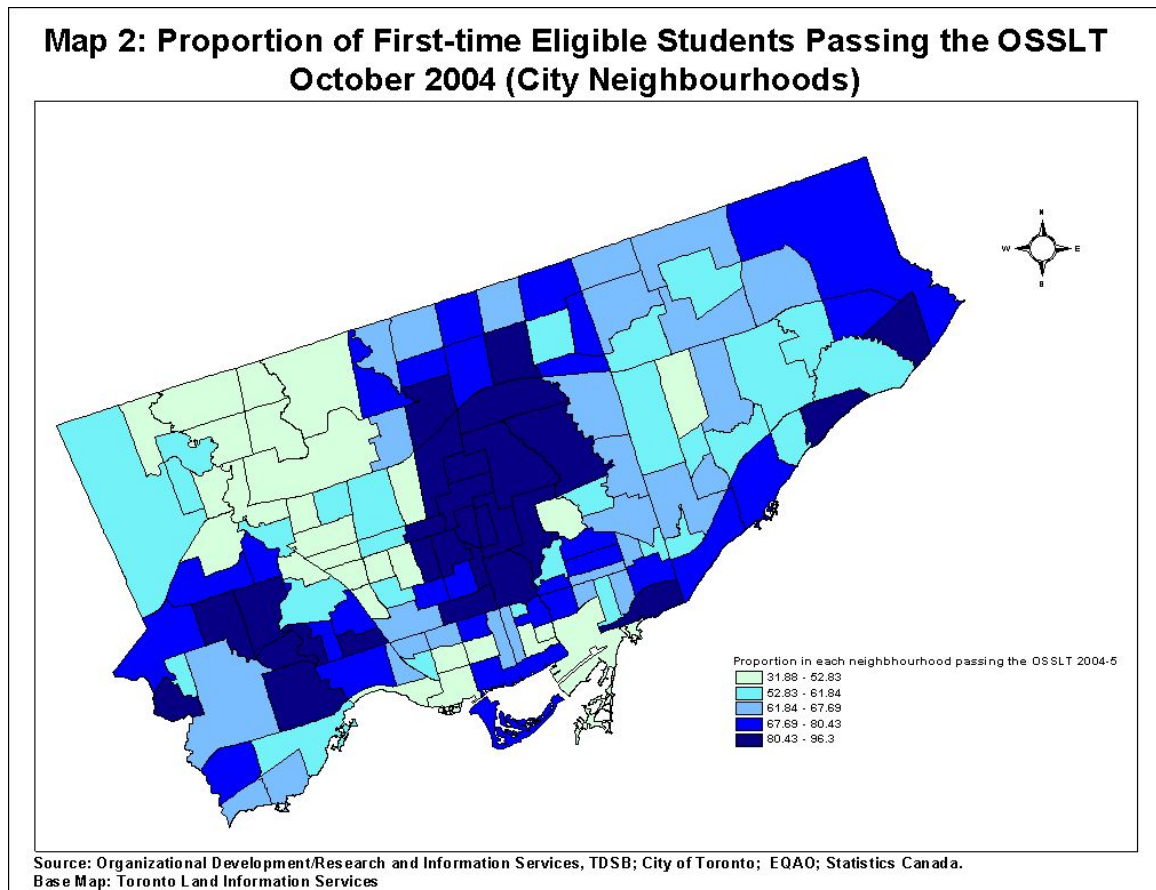
Given the importance of Grade 10 credit accumulation to later student performance, we looked at the relationship between credits achieved by the end of Grade 10, and passing the OSSLT on the first try. Previous research (e.g. Brown, 1999) has shown that students who had completed 14 or fewer credits at the end of Grade 10 were highly at risk, while students who had completed 16 or more credits were at comparatively low risk. Indeed, in this group of Grade 10 students, less than half of those who had completed 14 credits at the end of Grade 10 had successfully completed their OSSLT on first sitting, while the vast majority of students with 16 or more credits were successful in writing their OSSLT.

Figure 34: Credit Accumulation by end of Grade 10 and Proportion of FTE Students Passing the OSSLT



f. City Neighbourhoods and Passing the OSSLT, 2004-5

Map 2 looks at the proportion of first-time eligible students passing the OSSLT in October 2004 in each of the 140 City of Toronto neighbourhoods (seen earlier in Grade 9 EQAO Math results). Placement in neighbourhoods was based on student home residence, not school attendance, since many students do not attend school in their area of home residence.



Not surprisingly, the overall pattern of OSSLT performance is closely related to economic challenge, while high performance is closely related to high income and socio-economic representation in neighbourhoods.

The following neighbourhoods had fewer than half of first-time eligible students passing the OSSLT the first time they were eligible to write:

- Rustic;
- Humber Summit;
- Caledonia-Fairbanks;
- Humbermede;
- Black Creek;
- Kensington-Chinatown;
- Thorncliffe Park;
- South Riverdale;
- Downsview-Roding-CFB;
- Regent Park;
- Moss Park;
- Glenfield-Jane Heights;
- Trinity-Bellwoods;
- Mount Dennis;
- Brookhaven-Amesbury;
- Niagara;
- Beechborough-Greenbrook;
- Elms-Old Rexdale; and
- Weston-Pellam Park.

The following neighbourhoods had 80% or more of first-time eligible students passing the OSSLT the first time they were eligible to write:

- Playter Estates-Danforth;
- Bayview Village;
- Annex;
- Edenbridge-HumberValley;
- Mount Pleasant West;
- St.Andrew-Windfields;
- Centennial Scarborough;
- High Park North;

- Forest Hill North;
- Lambton-Baby Point;
- Guildwood;
- Kingsway South;
- Banbury-Don Mills;
- Lansing-Westgate;
- Yonge-Eglinton;
- Stonegate-Queensway;
- Rosedale-Moore Park;
- BridlePath-Sunnybrooke-York Mills;
- Humewood-Cedarvale;
- Markland Woods;
- The Beaches;
- Mount Pleasant East;
- Princess-Rosethorn;
- Bedford Park-Nortown;
- Leaside-Bennington;
- Lawrence Park South;
- Lawrence Park North;
- Forest Hill South; and
- Yonge-St.Clair

For more detail on City of Toronto neighbourhoods, see:

http://www.city.toronto.on.ca/demographics/neighbourhood_profiles.htm

PART 6: WHAT'S IN A GRADE? THE DIFFERENT DEFINITIONS OF GRADE AT THE SECONDARY PANEL

In the Ontario secondary panel, "grade", like "dropout", is a term that displays great elasticity-- in many cases, a student can be validly described as being in multiple grades. For example, it is quite possible for a student to complete EQAO's Grade 9 Math assessment during 2004-5, but also to be 'first-time eligible' to write the Ontario Secondary School Literacy Test (OSSLT). Yet the student may also be categorized by placement in the Trillium system as Grade 11 or even Grade 12.

This is not just an academic argument. In Part 3, we note that 14% of students writing EQAO's Grade 9 Math test were, by most standards, students in Grades 10-12. Most had withdrawn from or failed Grade 9 Math one or two academic years earlier, in their first year of secondary school. There is a good chance that these students would have written the EQAO Grade 9 Math test once or even twice earlier.

Moreover, 9% (1,799) of students writing the Grade 9 Math test in 2004-5 were *also* first-time eligible to write the EQAO literacy test (OSSLT) in that year while 2% (344) of Grade 9 Math participants were previously-eligible to write the OSSLT. These Grade 9 Math participants were, according to EQAO's literacy test methodology, Grade 10 or Grade 11-12 students.

Not that EQAO's literacy test is exactly clear about who is supposed to write in what grade. In theory, OSSLT first-time eligible students provide the most pristine example of Grade 10 students-- those students in their second year of high school, and eligible therefore to write the literacy test for the first time. Yet in Part 5, we found that 7% of OSSLT first-time eligible students (1,532 of 22,975) had been considered first-time eligible in previous administrations of the OSSLT-- Grade 10 for two or three times, according to this definition.

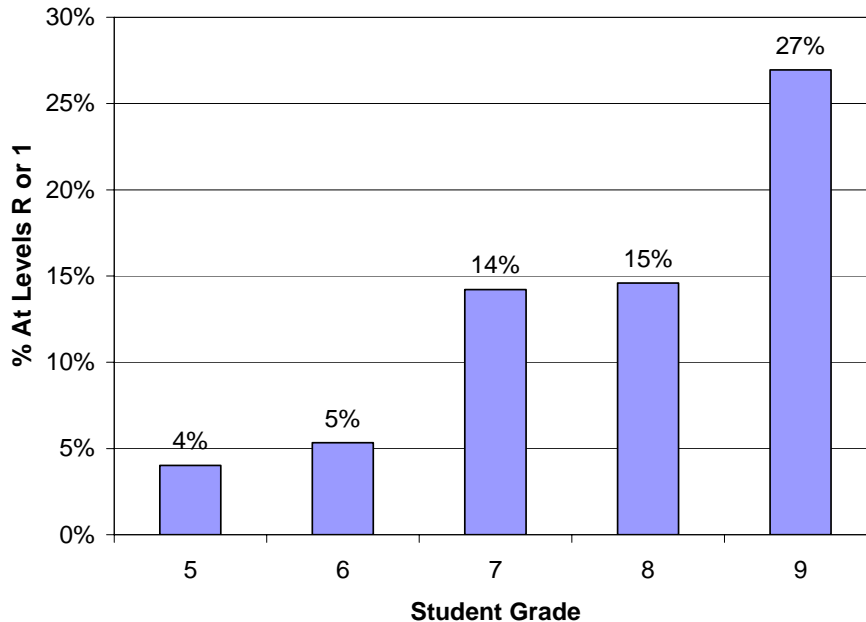
In part this may be due to ambiguity in classifying students, but the ambiguity itself is a consequence of the lack of clarity around what "grade" many students are in. It is for this reason that TDSB's Planning Department reports elementary enrolment by grade but secondary enrolment by student age. When looking at EQAO Grade 10 Math, EQAO Grade 10 OSSLT, and the Grade 9 and 10 Secondary Student Success Indicators

(not to mention the Success to 18 and other indicators) one should be very careful to observe the definition of what group is being examined.

PART 7: ACHIEVEMENT IN GRADE 8 REPORT CARD DATA 2002-3 AND GRADE 10 ACHIEVEMENT TWO YEARS LATER (2004-5)

The change in at-risk status as students get older has been well documented. Figure 35 below shows the proportion of students at levels R or 1 in English from grades 5-9 over the 2003-4 school year.¹² In Grade 6, just 5% of students perform below level 2 on English report cards. This jumps to 14% in Grade 7, 15% in Grade 8 and 27% in Grade 9 (for further information, see Brown, 2004b).

**Figure 35: Proportion of Students at Levels R or 1
English, by Grade, TDSB, 2003-4**



a. Last Year's Analysis

In last year's report (Brown, 2004a) we looked at the relationship between Math, English and Science achievement in Grade 8 (2002-3) and then with the same students in

¹² In Grade 5-8, English does not exist as a separate subject but is reported as "Reading" and "Writing"; for this analysis the two strands were averaged together for Term 3 marks 2004. Grade 9 English excluded ESL/ELD. Likewise, for Math, the five Math strands (Data Management, Geometry, Measurement, Number Sense, Patterning) were averaged together.

the Grade 9 cohort (2003-4). We found a fairly close relationship between Grade 8 and 9 achievement, especially at the extremes (students failing or not completing subjects, and Level 4, i.e. an average of 80% or more). For example, of students who received a Level R in Grade 8 Science, 71% did not complete a Science course in Grade 9, or received a mark of less than 60. Of students who had achieved Level 4 in Grade 8 Science, 83% achieved Levels 3 or 4 in Grade 9-- that is, they achieved a mark of 70 or higher in Grade 9 Science. In each subject, there were exceptions—it was a strong trend, not a linear condition.

We then combined Grade 8 achievement in the three subjects into four categories:

- Low Risk: Students who achieved at Levels 2 or higher in all subjects (two thirds of Grade 8 students)
- Moderate Risk: Students who achieved at Levels 2 or higher in two subjects but at Levels 1 or R in *one* subject (15% of students)
- High Risk: Students who achieved at Levels 2 or higher in one subject but at Levels 1 or R in *two* of the three subjects (10% of students)
- Very High Risk: Students who achieved at Levels 1 or R in *all three* subjects (8%).

Thus, a third of students were at some sort of risk and slightly less than a fifth were high risk. This was compared to credit accumulation in Grade 9 and a close relationship was found between students identified as highly at-risk in Grade 8 (using elementary school report card information) and students identified as highly at risk in Grade 9 (using secondary school report card information).¹³

b. Grade 8 Achievement and Grade 9/10 Achievement

In this analysis, the same Grade 8 report card information from 2002-3 was linked with 2003-4 Secondary Student Success information, specifically 1) total Math, English and Science achievement over Grades 9 and 10 (2003-4 and 2004-5); 2) total credit

¹³ These findings were almost identical to a previous study of Grade 8/9 transitions in Brown, 2004b.

accumulation to end of Grade 10 in August 2005; and 3) achievement of first-time eligible students in the Ontario Secondary School Literacy Test (OSSLT) administered in Fall 2004.

c. Achievement in Math, English, and Science

The close relationship between achievement at the extremes, observed last year with the Grade 8-9 transition, still exists when Grade 10 is added to Grade 9 achievement in Math, English and Science. Thus, in Table 4, a majority (1,213 of 2,121, or 57%) of students at Levels R or 1 in Grade 8 were also at Levels R or 1 in the combined Grade 9 and Grade 10 Math achievement; nearly three quarters (74%) of students at Level 4 in Grade 8 were at Levels 3 or 4 (that is, an average of 70% or more) over Grades 9/10.¹⁴

Table 4: Math Achievement in Grade 8 and Grades 9-10

			Math Achievement in Grades 9 and 10 (2003-2005)					Total
			Level R (no credit)	Level 1	Level 2	Level 3	Level 4	
Math Achievement Grade 8 (2002-3)	Level R	Count	105	298	180	68	23	674
		% within Grade 8 Math Achievement	15.6%	44.2%	26.7%	10.1%	3.4%	100.0%
		% within Grade 9-10 Math Achievement	23.6%	10.3%	5.9%	2.9%	.9%	6.0%
	Level 1	Count	157	653	418	160	59	1447
		% within Grade 8 Math Achievement	10.9%	45.1%	28.9%	11.1%	4.1%	100.0%
		% within Grade 9-10 Math Achievement	35.3%	22.6%	13.6%	6.9%	2.4%	13.0%
	Level 2	Count	115	918	747	381	93	2254
		% within Grade 8 Math Achievement	5.1%	40.7%	33.1%	16.9%	4.1%	100.0%
		% within Grade 9-10 Math Achievement	25.8%	31.8%	24.4%	16.5%	3.8%	20.2%
	Level 3	Count	57	732	981	672	321	2763
		% within Grade 8 Math Achievement	2.1%	26.5%	35.5%	24.3%	11.6%	100.0%
		% within Grade 9-10 Math Achievement	12.8%	25.4%	32.0%	29.1%	13.0%	24.8%
Level 4	Count	11	285	738	1025	1964	4023	
	% within Grade 8 Math Achievement	.3%	7.1%	18.3%	25.5%	48.8%	100.0%	
	% within Grade 9-10 Math Achievement	2.5%	9.9%	24.1%	44.4%	79.8%	36.0%	
Total	Count	445	2886	3064	2306	2460	11161	
	% within Grade 8 Math Achievement	4.0%	25.9%	27.5%	20.7%	22.0%	100.0%	
	% within Grade 9-10 Math Achievement	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Likewise in Tables 5 and 6 below, Grade 8 achievement in English and Science strongly anticipates English and Science achievement of these students in their first two years of high school.

¹⁴ The Grades 9/10 levels in Tables 4-6 were calculated through a combination of Grade 9 and Grade 10 (2003-4 and 2004-5) achievement in each subject. Thus, in Table 4, students at Level R (no credit) in Math Achievement in Grades 9 and 10 (2003-2005) had not achieved a Math credit during their two years of high school. Students at Level 1 had achieved an average of 50-59% in Math credits achieved over the two school years; students at Level 2 had achieved an average of 60-69% in Math credits over the two years; those had Level 3 achieved an average of 70-79%; while those in Level 4 achieved an average of 80% or more in Math credits over the two years of secondary school.

The relationship reinforces previous research—i.e. we are seeing a strong trend, but not an absolute relationship. Lower performance in Grade 8 should be a caution, but is not a determination, of lower performance in the secondary panel.

Table 5: English Achievement in Grade 8 and Grades 9-10

			English Achievement in Grades 9 and 10 (2003-2005)					
			Level R (no credit)	Level 1	Level 2	Level 3	Level 4	Total
English Achievement Grade 8 (2002-3)	Level R	Count	60	189	160	78	15	502
		% within Grade 8 English Achievement	12.0%	37.6%	31.9%	15.5%	3.0%	100.0%
		% within Grades 9-10 English Achievement	21.4%	10.9%	5.3%	2.4%	.6%	4.6%
	Level 1	Count	84	421	431	213	38	1187
		% within Grade 8 English Achievement	7.1%	35.5%	36.3%	17.9%	3.2%	100.0%
		% within Grades 9-10 English Achievement	29.9%	24.2%	14.3%	6.6%	1.5%	10.9%
	Level 2	Count	88	624	976	621	112	2421
		% within Grade 8 English Achievement	3.6%	25.8%	40.3%	25.7%	4.6%	100.0%
		% within Grades 9-10 English Achievement	31.3%	35.9%	32.4%	19.3%	4.3%	22.3%
	Level 3	Count	42	417	1092	1345	593	3489
		% within Grade 8 English Achievement	1.2%	12.0%	31.3%	38.5%	17.0%	100.0%
		% within Grades 9-10 English Achievement	14.9%	24.0%	36.2%	41.8%	22.9%	32.2%
Level 4	Count	7	87	358	959	1834	3245	
	% within Grade 8 English Achievement	.2%	2.7%	11.0%	29.6%	56.5%	100.0%	
	% within Grades 9-10 English Achievement	2.5%	5.0%	11.9%	29.8%	70.8%	29.9%	
Total	Count	281	1738	3017	3216	2592	10844	
	% within Grade 8 English Achievement	2.6%	16.0%	27.8%	29.7%	23.9%	100.0%	
	% within Grades 9-10 English Achievement	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 6: Science Achievement in Grade 8 and Grades 9-10

			Science Achievement in Grades 9 and 10 (2003-2005)					
			Level R (no credit)	Level 1	Level 2	Level 3	Level 4	Total
Science Achievement Grade 8 (2002-3)	Level R	Count	106	230	148	67	17	568
		% within Grade 8 Science Achievement 2002-3	18.7%	40.5%	26.1%	11.8%	3.0%	100.0%
		% within Grade 9-10 Science Achievement	26.9%	10.2%	4.9%	2.5%	.7%	5.2%
	Level 1	Count	157	664	575	273	65	1734
		% within Grade 8 Science Achievement 2002-3	9.1%	38.3%	33.2%	15.7%	3.7%	100.0%
		% within Grade 9-10 Science Achievement	39.8%	29.4%	19.0%	10.0%	2.5%	15.8%
	Level 2	Count	72	704	861	529	146	2312
		% within Grade 8 Science Achievement 2002-3	3.1%	30.4%	37.2%	22.9%	6.3%	100.0%
		% within Grade 9-10 Science Achievement	18.3%	31.2%	28.5%	19.5%	5.6%	21.0%
	Level 3	Count	50	536	1001	960	573	3120
		% within Grade 8 Science Achievement 2002-3	1.6%	17.2%	32.1%	30.8%	18.4%	100.0%
		% within Grade 9-10 Science Achievement	12.7%	23.7%	33.1%	35.3%	22.0%	28.4%
Level 4	Count	9	124	435	889	1803	3260	
	% within Grade 8 Science Achievement 2002-3	.3%	3.8%	13.3%	27.3%	55.3%	100.0%	
	% within Grade 9-10 Science Achievement	2.3%	5.5%	14.4%	32.7%	69.2%	29.7%	
Total	Count	394	2258	3020	2718	2604	10994	
	% within Grade 8 Science Achievement 2002-3	3.6%	20.5%	27.5%	24.7%	23.7%	100.0%	
	% within Grade 9-10 Science Achievement	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

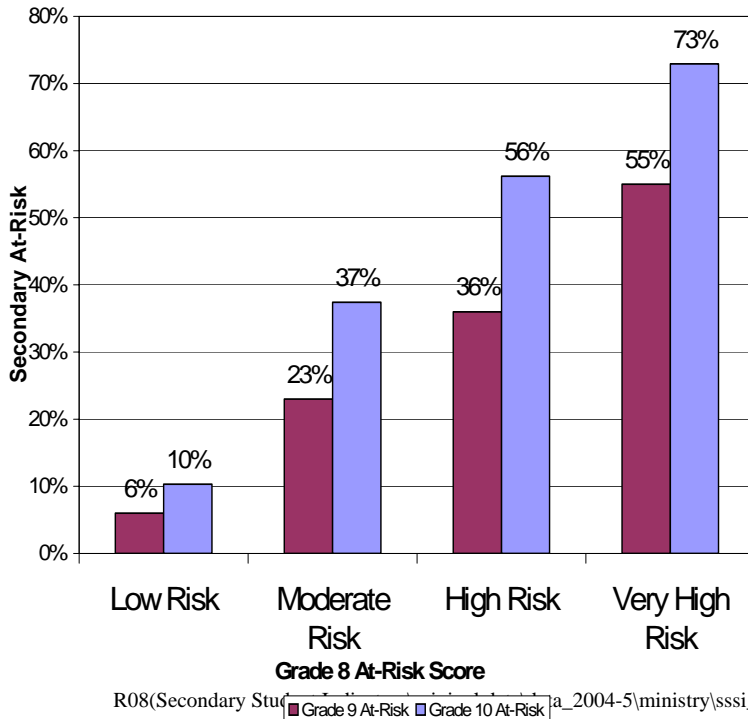
d. Grade 8 “At-Risk” Status and Credit Accumulation to the end of Grade 10

Credit accumulation in Grades 9 and 10 have been shown to be extremely strong predictors of student achievement. Students who achieve six or fewer credits by the end of Grade 9, and those who achieve 14 or fewer credits by the end of Grade 10, have been shown to be at-risk of not graduating from high school on time. Of these, Grade 10 credit accumulation is usually considered the strongest predictor.

The relationship between Grade 8 “at risk” status (using performance in Math, English and Science) and Grade 9 “at risk” status (using total credit accumulation) was already clearly documented, as discussed and seen in Figure 35 above (pp. 55-56).

Figure 36 shows that the relationship is even stronger with ‘at risk’ using credit accumulation to the end of Grade 10. Of students identified as “low risk” in Grade 8 (Levels 2 or above in English, Math and Science), only 10% were identified as ‘at-risk’ through credit accumulation by the end of Grade 10; while the majority of highly at-risk students from Grade 8 were also at-risk by the end of Grade 10. Again, this shows that Grade 8 achievement has a strong-- but not absolute-- relationship to secondary panel achievement.

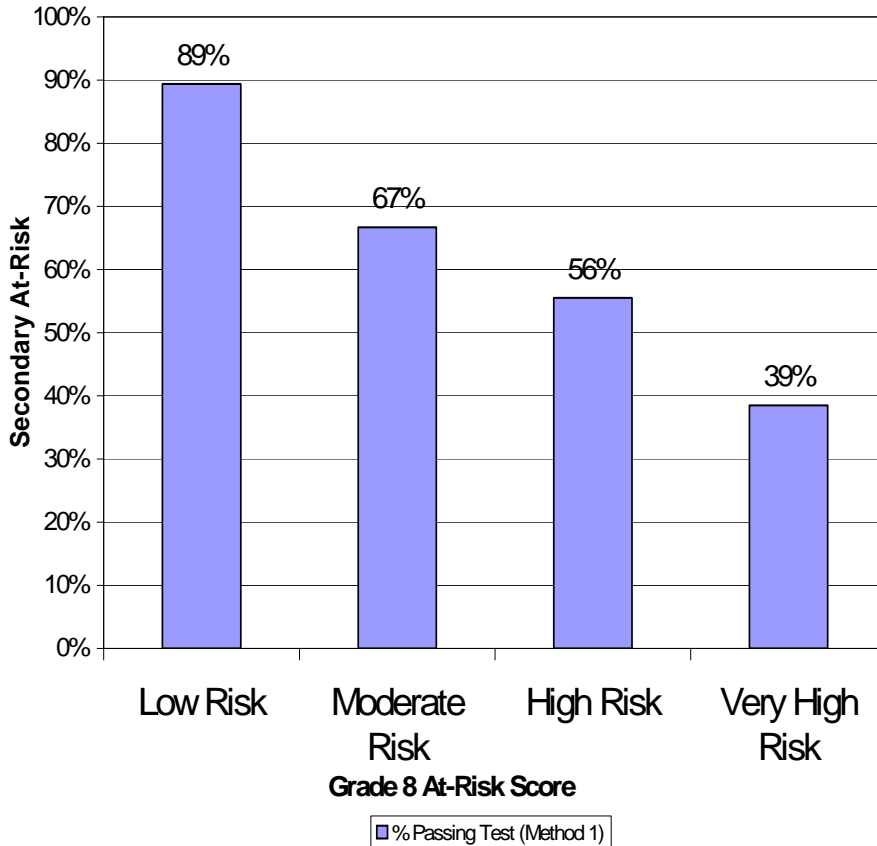
Figure 36: Grade 8 Report Card At-Risk Score (2002-3 Report Card data), and Proportion of At-Risk Grade 9 (2003-4) and Grade 10 (2004-5) Students



e. Grade 8 “At-Risk” Status and Achievement in the Grade 10 Literacy Test (OSSLT)

Achievement of students writing the literacy test (OSSLT) for the first time further demonstrates the ‘clear but by no means absolute’ relationship between Grade 8 ‘at risk’ status and future performance in the secondary panel. While the vast majority (89%) of ‘low risk’ students in Grade 8 had successfully completed the literacy test on its first administration, slightly over half of high risk and little over a third of very high risk students had done so. Since these students are being followed over seven years of high school as part of our cohort tracking studies, we will have a more complete picture within a few years of how Grade 8 achievement fits with secondary student success.

Figure 37: Grade 8 Report Card At-Risk Score (2002-3 Report Card data), and Achievement in the OSSLT, 2004-5



PART 8: CHARACTERISTICS OF GRADE 9 COHORT AND GRADE 10 STUDENTS TAKING SPECIAL EDUCATION COURSES (EXCLUDING GIFTED), 2004-5

Like “grade” and many other definitions in the secondary panel, “special education” has several different (and somewhat conflicting) definitions, among them:

- Students who are designated as a number of classifications or exceptionalities according to the IPRC (Identification, Placement and Review Committee) process (e.g. Behavioural, Deaf/hard of hearing);
- Students who are categorised as attending “Special Education” programs according to Ministry of Education formula (to be applicable for funding, students need to be taking half or more of their programming in partly or fully self-contained Special Education classes);
- Students taking Special Education courses (who may or may not be in any of the above two categories).
- Students receiving some sort of individualised special instruction, usually defined through an Individual Education Plan (IEP).

This introductory analysis looks at the characteristics of students in the Grade 9 cohort, and Grade 10 students, taking Special Education courses. Students were categorised as taking “Special Education” if they registered, during the regular 2004-5 school year, in at least one TDSB course considered to be Special Education (for details, see Appendix 4).

a. Characteristics of Students Taking Special Education Courses in 2004-5

There were 7,099 students attending the TDSB in Fall 2004 who enrolled in Special Education courses, or 8% of all TDSB secondary students. This number is twice as high as the 3,560 headcount (all Special Education categories except for Gifted) in TDSB enrolment as reported through Facility Services. The reason is the stringent Ministry definition of students in Special Education “programs” or “classes”, which

includes only students with more than half of their instruction in fully self-contained or partially integrated Special Education instruction.

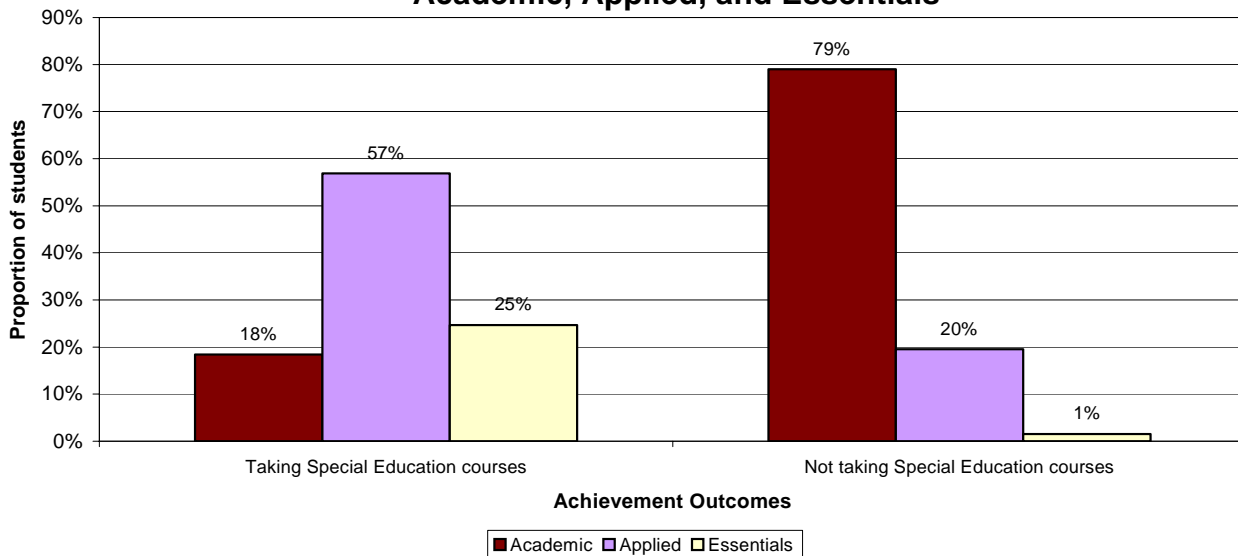
At the same time, the 8% reported here is less than the percentage of secondary students having some sort of Special Education instruction, as reported through the TDSB October Report to the Ministry (approximately 12% of the TDSB secondary panel, again, excluding Gifted, compared to the 8% taking Special Education courses as defined in this evaluation). The Special Education courses as defined here are an important part of the total picture but miss students given some sort of individual assistance not obviously determined through the six digit secondary course codes. This should be considered an important first step in examining secondary Special Education in the TDSB, but the next step would include looking at all students with special instruction, whether or not they are identified through course codes.

Half the students taking Special Education courses are age appropriate for Grades 9 and 10, a proportion slightly higher than the total TDSB population (41%). Two thirds are male, compared to slightly over half (53%) of the total TDSB population. They are also much more likely to be born in Canada than the total TDSB population (73%, compared to the secondary panel average of 57%). They are less likely to be born in South Asia than the total TDSB (5% versus 10% TDSB secondary total) or Eastern Europe (2% versus 5% TDSB secondary total). This difference is worth further investigation.

b. Grade 9 Cohort Student Achievement

11% of the Grade 9 cohort of 2004-5 took Special Education courses during the 2004-5 school year (1,967 of 17,823).¹⁵ These students were much less likely to be taking Academic level programming than other cohort students (18% versus 79%), and much more likely to be taking Applied (57% versus 20%) and Essentials (25% versus 1%). In fact, 2/3 of the cohort Essentials students (464 of 700) were taking Special Education courses.¹⁶

Figure 38 Grade 9 Cohort Students Taking Special Education Courses: Academic, Applied, and Essentials

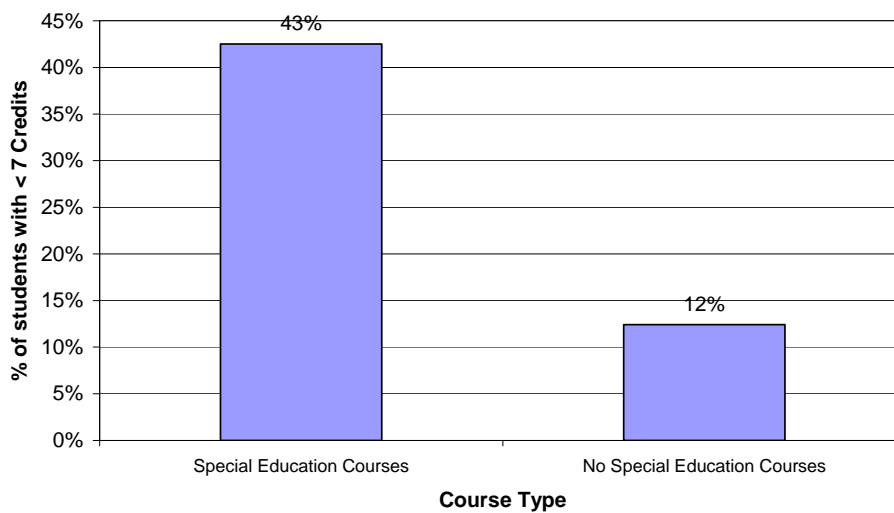


¹⁵ 78% of Grade 9 cohort students taking Special Education courses were born in Canada versus 63% of those not taking Special Education. 66% of Grade 9 cohort students taking Special Education were male, versus 50% of cohort students not taking Special Ed.

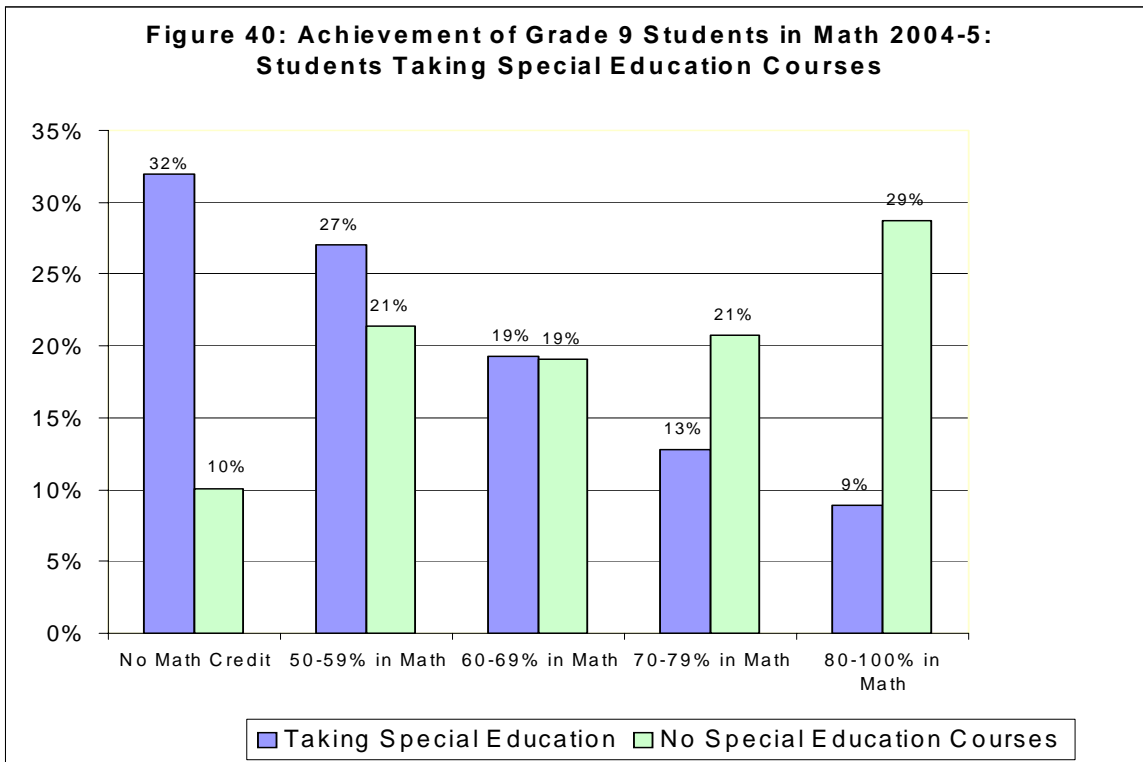
¹⁶ At the same time, it is important to remember that three quarters of students taking Special Education courses were not taking the majority of their courses in the Essentials program of study.

Students in the Grade 9 cohort taking Special Education courses were almost four times as likely to be at risk by credit accumulation (fewer than seven credits completed by the end of Year 1 of high school). That is, while 43% of students taking Special Education courses were at risk, only 12% of students not taking Special Education were at risk.

**Figure 39: Proportion of Students with < 7 Credits
Grade 9 Cohort of 2004-5: Students Taking Special
Education Courses**

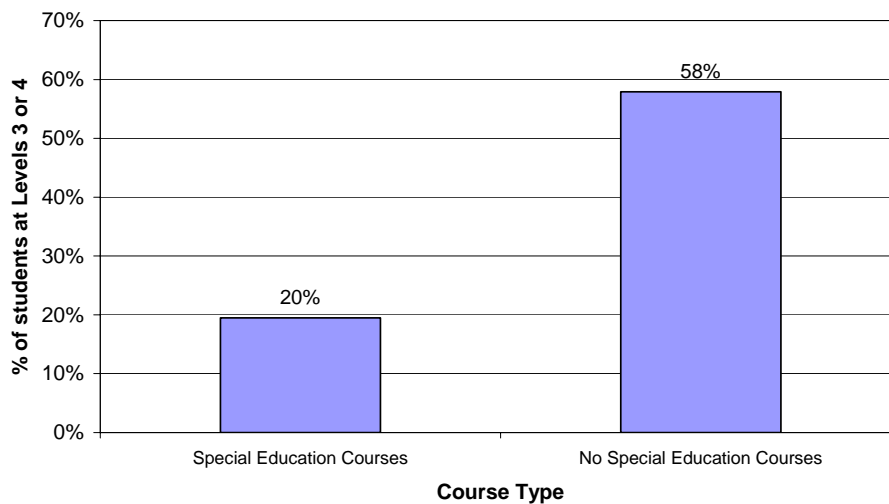


Students taking Special Education courses were more than three times as likely not to have achieved a Math credit than students not taking Special Education courses (32% compared to 10%) and three times less likely to have achieved at Level 4 in Math (9% compared to 29% of students not taking Special Education courses). Patterns of English and Science achievement are similar.



Students in the Grade 9 cohort taking Special Education courses were only about a third as likely to achieve at Levels 3 or 4 in the EQAO Grade 9 Math assessment (20%, compared to 58% of students not taking Special Education).¹⁷

Figure 41: Proportion of Grade 9 Cohort Students Achieving at Levels 3 or 4 in the EQAO Math Test 2004-5



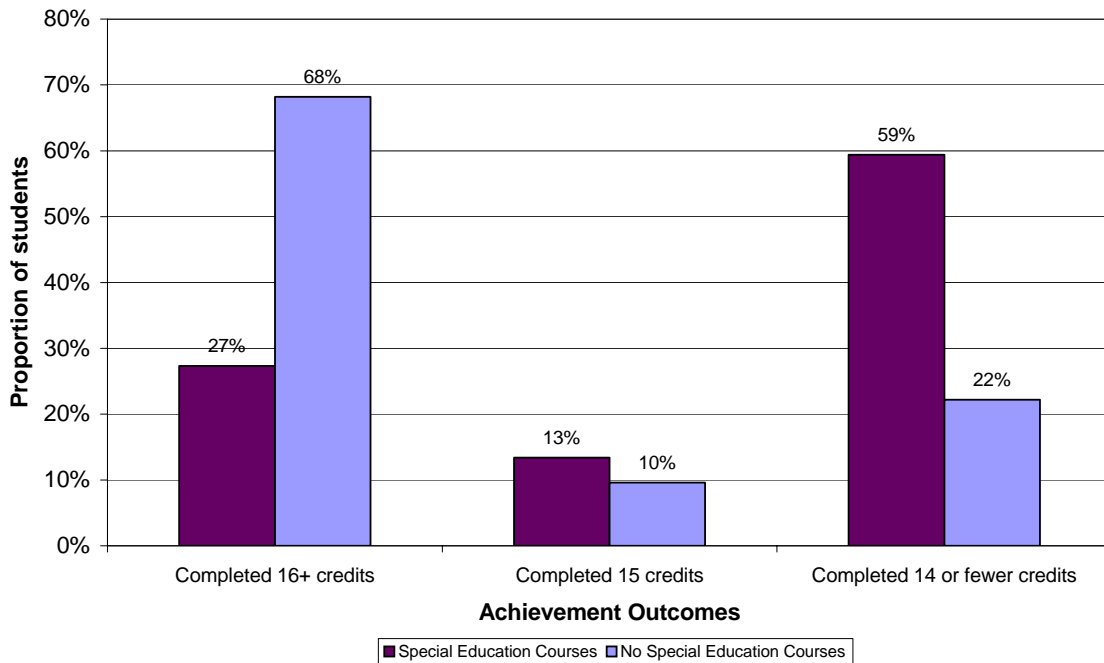
¹⁷ In fact the difference may be greater, since we have already noted that many of the most at-risk Grade 9 cohort students did not participate in the EQAO Math assessment.

c. Grade 10 Student Achievement

Grade 10 students are defined here (as in Part 4) as 15 year olds (born in 1989) who were not in the Grade 9 cohort, nor in Grade 11 according to credit accumulation (these students were present at both the beginning and end of the 2004-5 school year). Of these students, 9% (1,548 of 17,361) were taking Special Education courses.

Grade 10 students taking Special Education courses were almost three times as likely to be at risk, compared to students not taking Special Education courses.

**Figure 42 Credit Accumulation of Grade 10 Students 2004-5:
Students Taking Special Education Courses**



PART 9: GRADUATION AND DROPOUT RATES OF TDSB STUDENTS: A COMPARATIVE ANALYSIS, 2000-1 to 2004-5

a. Graduation and Dropout Rates of 14-19 Year Old Students

- There are many ways to calculate graduation and dropout rates (e.g., annual and cohort rates). Appendix 1 contains a brief discussion of this complex issue. This report focuses on providing “annual” graduation and dropout rates. “Cohort” rate information is provided in the series of TDSB Grade 9 cohort studies.
- In the current report, **Graduation** is defined as achieving a high school diploma, or achieving 30 or more credits, by the end of the 2004-5 school year. Many students will compile more credits before officially graduating, to prepare for post-secondary applications or the workplace.¹⁸
- **Dropout** is defined as leaving the TDSB without graduating or transferring to another educational institution.
- The 2004-5 school year is the second year of the full OSS curriculum, following the ‘double cohort’ of 2002-3, the last year where both the former OS:IS curriculum, and the newer OSS curriculum, were interconnected.
- Of all 14-19 year old students present in the TDSB in Fall 2003, the proportion of students who returned to the TDSB the next school year was 70%. This was virtually the same as 2003-4, but it was an increase of 5% over the years previous to 2003-4. The proportion of all 14-19 year old students graduating was 20%, again, almost

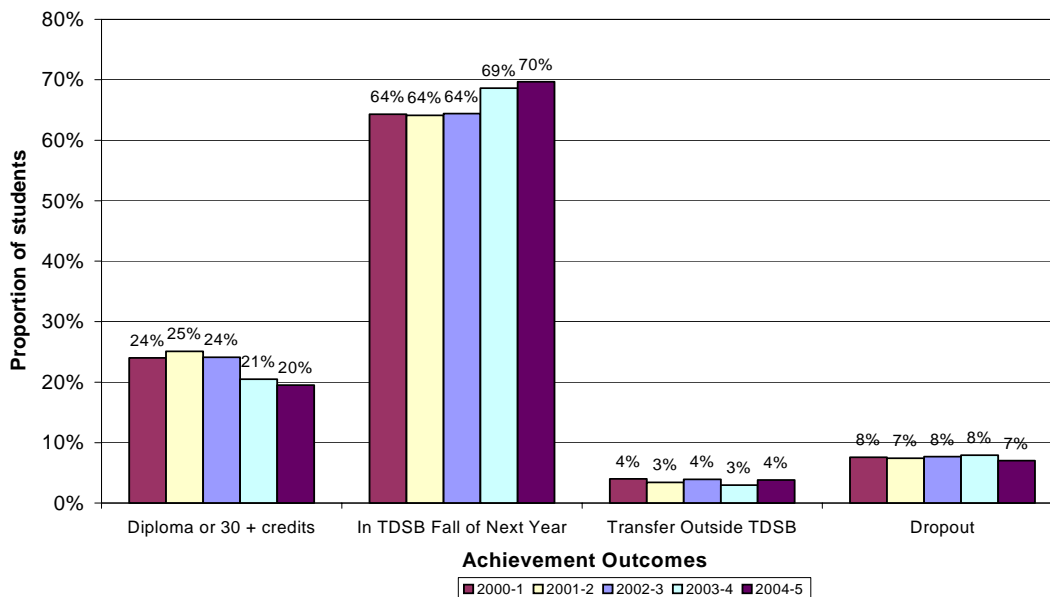
¹⁸ Out of these 17,030 students defined here as graduates, 1) 2,701 (16%) had already received an OSSD prior to the 2004-5 school year; 2) 12,945 of 17,030 (76%) received an OSSD recorded on Trillium during the 2004-5 school year (September 2004 to June 2005); while 3) 1,384 of 17030 (8%) had not received an OSSD according to Trillium. Most (61%) of these students without an awarded OSSD continued in the TDSB into the next, 2005-6, school year. These students may have decided to graduate over the next school year, when they apply to post-secondary. Or they may be missing official OSSD information on their SIS file (they may have received an OSSD from another DSB, for example). In a small number of

identical to 2003-4, but a decline of 5% over previous years. The overall proportion of students transferring to secondary study outside the TDSB remained steady at 3%, and the proportion of students dropping out of secondary school without graduating also remained steady at 8%.

- The reason for this difference is curricular. 2003-4 was the first year where all secondary students received instruction under the new OSS curriculum. As will be shown, the main difference centres on 17 year old students. Under OSS, these students leave the TDSB to go to university in much greater numbers than under the old OS:IS curriculum. The remaining students who stay for a fifth year of secondary school as 18 year olds, are also more like to stay in school for an additional sixth school year as 19 year olds. This provides a somewhat deceptive (and declining) picture of 14-19 year old graduation patterns over time. In fact a better overall indicator is the proportion of total dropout and transfer, which have remained stable over the five years of the Secondary Student Success Indicators.
- The change from OS:IS to OSS is clearer in looking at 17 and 18 year old students over the five year period, which will be done below.

cases, however, they may not actually receive an OSSD, despite having the number of credits needed for graduation, because they are missing needed compulsory credits.

Figure 43: Achievement Outcomes of 14-19 Year Olds, 2000-1 to 2004-5

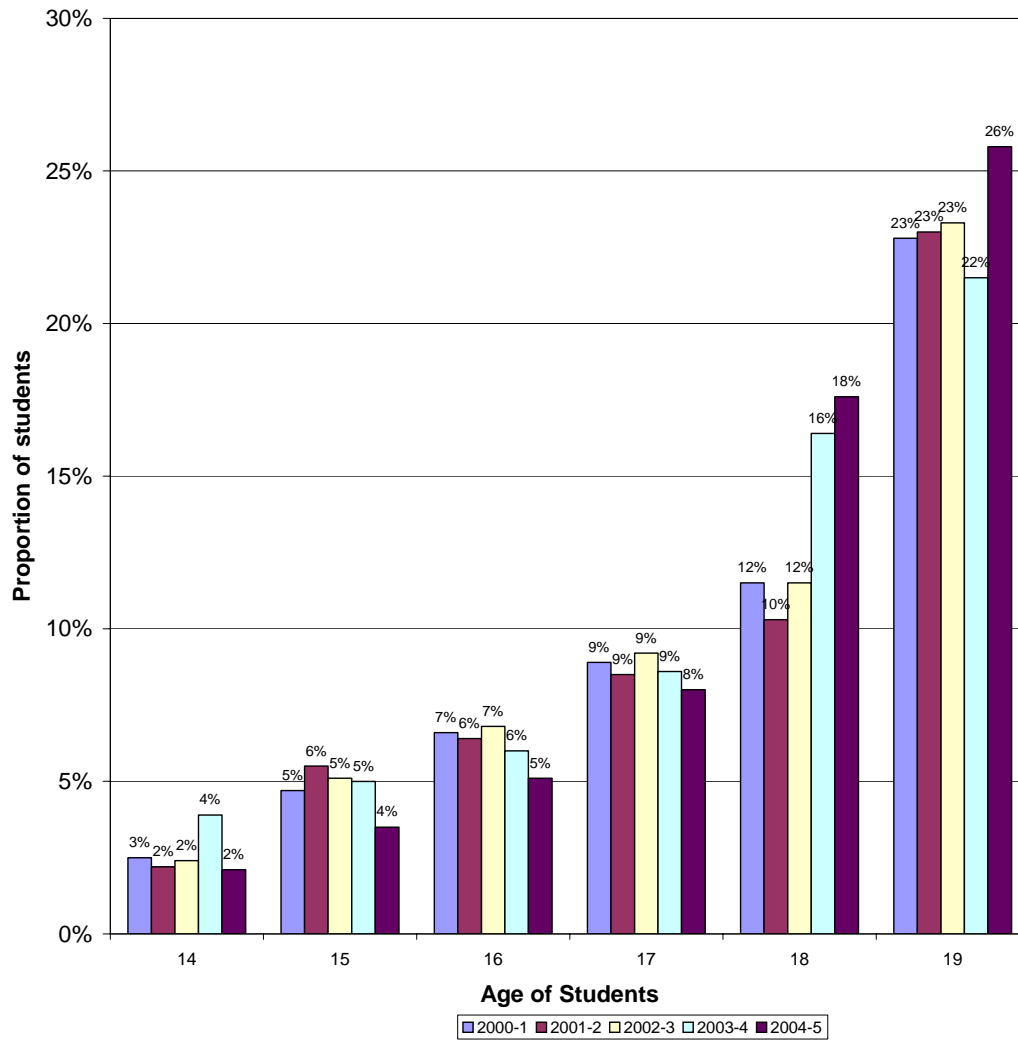


b. Dropout Rates of 14-19 Year Old Students: by Age

- Student dropout is closely related to age. While 4% of 15 year olds dropped out, 26% of 19 year olds dropped out.¹⁹ As seen in Figure 44, this pattern was virtually unchanged over the 3 year period of 2000-1 to 2002-3, but did change in 2003-4, the first full year of OSS, when the proportion of 18 year old dropouts increased. In 2004-5, the proportion of 19 year old dropouts also increased (this is the same cohort, one year older). As noted earlier, the overall dropout rate has remained the same.

¹⁹ It is probable that some of the students classified as transfers are actually dropouts, while some of the students classified as dropouts are actually transfers.

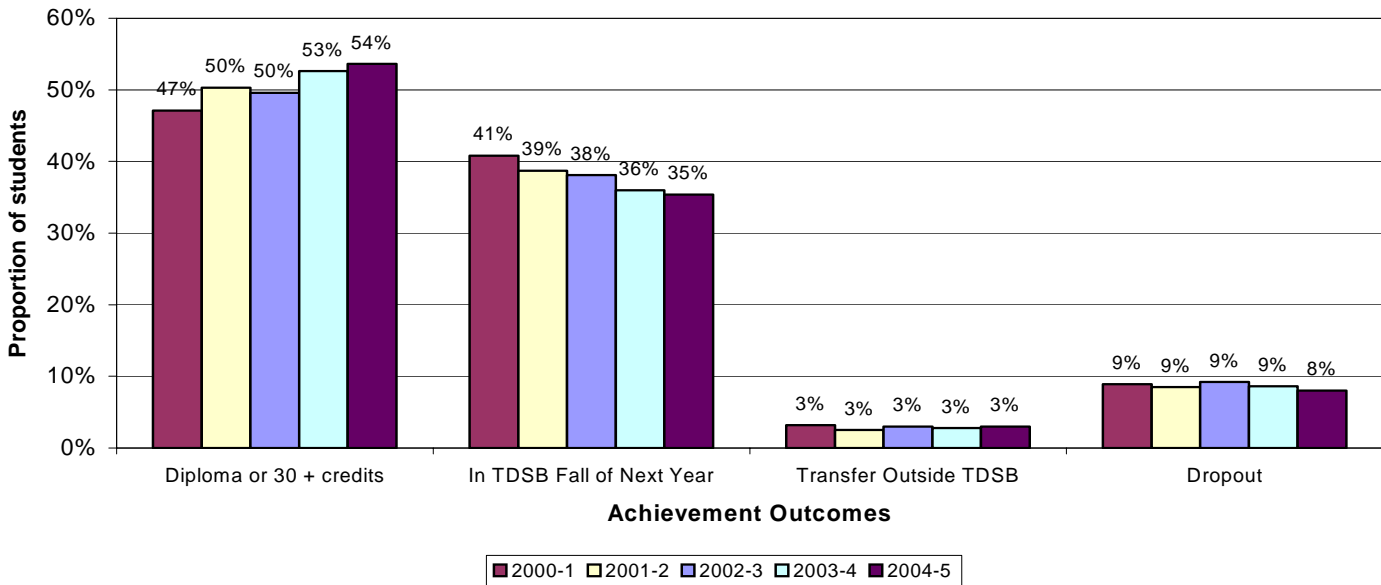
Figure 44: Annual Dropout Rate 2004-5: by Age



c. Graduation and Dropout Rates of 17 Year Old Students

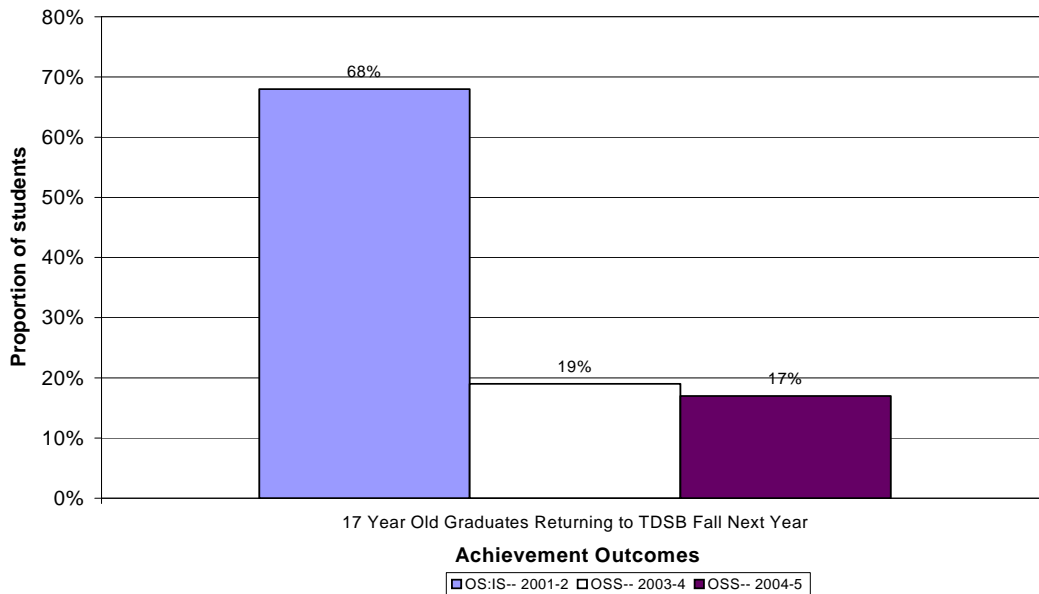
- As noted above, under the OSS curriculum, 17 year old students are more likely to apply to university than under the former OS:IS curriculum. Hence, the proportion of students graduating at 17 years of age has increased over time from 47% to 54%, while the proportion of these students not yet graduating but returning to the TDSB for Year 5 has decreased, from 41% to 35%.
- The proportion of 17 year old students transferring outside the TDSB has remained stable over the past four years at 3%, while the proportion of students dropping out has likewise remained at 8-9% since 2000-1.

**Figure 45: Achievement Outcomes of 17 Year Olds:
TDSB 2000-1 to 2004-5**



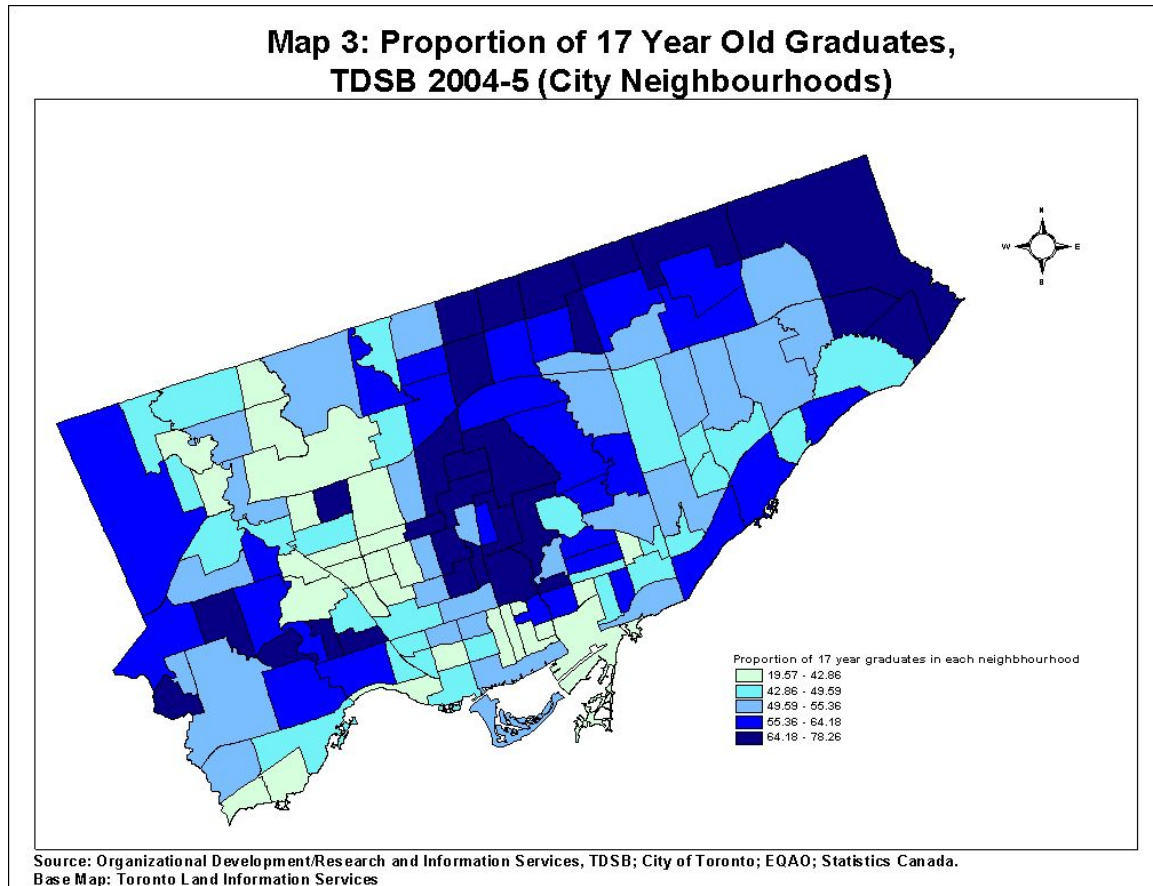
In addition, students who graduated in four years are much less likely to continue in the TDSB for an additional fifth year. For example, looking at the 2001-2 school year, 9,332 of 17 year olds had graduated by Fall 2002, yet 68% of these graduates returned to the TDSB in Fall 2002 for a fifth year of instruction. However, in the 2004-5 school year only 17% of 17 year old graduates returned to the TDSB in Fall 2005 for a fifth year of instruction. This was in itself a 2% decline from 19% of 17 year old graduates returning to the TDSB for Fall 2004 (see Figure 46). The other side of this is that the returning 18 year old students tend to be more at-risk and this trend is continuing (see below).

Figure 46: Proportion of 17 Year Old Graduates Returning to TDSB: OS:IS and OSS



d. City Neighbourhoods and 17 Year old Graduates

As seen above, 54% of 17 year olds in the TDSB in Fall 2004 had completed their OSSD requirements (or completed 30+ credits) by Fall 2005. Map 3 shows the distribution of graduates according to City of Toronto neighbourhoods (as seen earlier in Maps 1-2).



The following neighbourhoods had fewer than 40% of 17 year olds graduating by Fall 2005:

- Moss Park;
- Keelestdale-Eglinton West;
- Weston-Pellam Park;
- Glenfield-Jane Heights;
- Regent Park;

- Rustic;
- Black Creek;
- Mount Dennis;
- Trinity-Bellwoods;
- Caledonia – Fairbanks;
- North St.Jamestown;
- Thistletown-Beaumont Heights;
- Corsa Italia-Davenport;
- Downsview-Roding-CFB;
- South Riverdale;
- Oakwood-Vaughan;
- New Toronto;
- Bay Street Corridor;
- Church-Yonge Corridor;
- Woodbine-Lumsden;
- Blake-Jones; and
- Rockliffe-Smythe.

The following neighbourhoods had more than two thirds of 17 year olds graduating by Fall 2005:

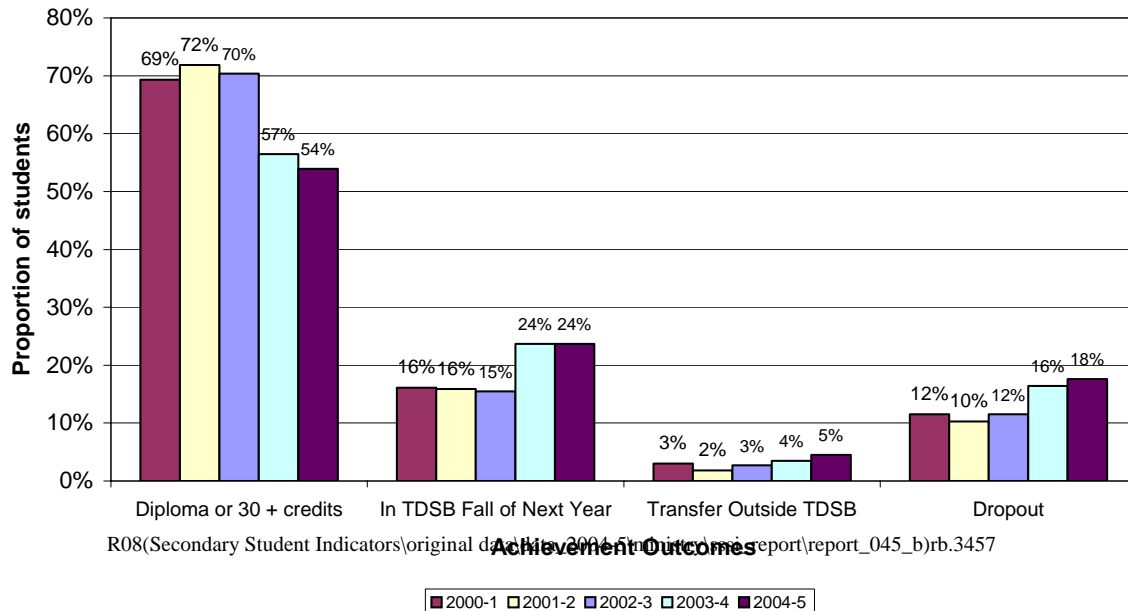
- High Park North;
- Steeles;
- Mount Pleasant East;
- Forest Hill North;
- Centennial Scarborough;
- Hillcrest Village;
- Milliken;
- Bedford Park-Nortown;
- Leaside-Bennington;
- Markland Woods;

- Lawrence Park South;
- Highland Creek;
- Bridle Path-Sunnybrooke-York Mills;
- Lawrence Park North;
- Forest Hill South;
- Casa Loma;
- Princess-Rosethorn; and
- Yonge-St.Clair.

e. Graduation and Dropout Rates of 18 Year Old Students

- The majority of 18 year old students had been in secondary studies for five years.
- Prior to the 2003-4 school year, most students took five or more years to complete their OSSD requirements and also to attain sufficient requirements to apply to postsecondary. As seen in Figure 47, the patterns of 18 year olds prior to 2003-4 (in other words, under the former OS:IS curriculum) were very consistent.
- However, in 2003-4 the proportion of 18 year old graduates decreased from 70% to 57%, the proportion of students returning to the TDSB increased from 15% to 24%, and the proportion of students dropping out increased from 12% to 16%. In 2004-5, the graduation rate further declined to 54% and the dropout rate increased to 18%.
- In large part, these changes are the natural effect of the curricular changes of OSS. As documented earlier (Brown, 2003) a key change of the OSS changes was that postsecondary-bound students now tend to graduate after four years in much larger numbers, whereas workplace and some post-secondary students continue to take five or more years to finish secondary studies. Consequently, the actual number of 18 year olds is much smaller under OSS (9,764 in Fall 2004 compared to 15,066 in Fall 2002) and appears to be continuing to decline (there were 10,411 18 year olds in Fall 2003, the first full year of OSS). In addition, the achievement characteristic of these students has changed. This pattern will continue to be monitored in the future.

**Figure 47: Achievement Outcomes of 18 Year Olds:
TDSB 2000-1 to 2004-5**



R08(Secondary Student Indicators)original data 2004-5 from Ontario Ministry of Education report/report_045_b)rb.3457

f. Ontario Scholars

- Out of 17,030 14-19 year old students present in Fall 2004 who had received an OSSD (or had received 30+ credits) by October 31 2005, 6,179 (36%) were Ontario Scholars. (Of 12,945 students who received an OSSD during the 2004-5 school year, 43% were Ontario scholars).²⁰
- 57% of TDSB Ontario scholars were female, 43% were male, a breakdown unchanged from 2003-4.
- 95% of Ontario scholars applied to Ontario post-secondary institutions—89% to university only, 3% to community college only, and 4% to both university and community college.

g. The Community Involvement Requirement

As part of the OSS curriculum, students are required to have completed a minimum of 40 hours of community hours prior to graduation. This information is (in theory) entered on the Trillium SIS system. As seen in Table 7, the majority of 17 and 18 year olds had completed the requirement by Fall of 2005. Female students were more likely to have completed the requirement than male students (see Table 8).

Table 7: Age and Community Hours

		Community Hours			Total
		No recorded hours	1-40 hours	40 hours or more	
Age 19	Count	1533	381	1859	3773
	%	40.6%	10.1%	49.3%	100.0%
18	Count	3343	718	5703	9764
	%	34.2%	7.4%	58.4%	100.0%
17	Count	5768	1228	11284	18280
	%	31.6%	6.7%	61.7%	100.0%
16	Count	11045	2074	5491	18610
	%	59.3%	11.1%	29.5%	100.0%
15	Count	14107	1780	3137	19024
	%	74.2%	9.4%	16.5%	100.0%
14	Count	15740	1175	878	17793
	%	88.5%	6.6%	4.9%	100.0%
Total	Count	51536	7356	28352	87244
	%	59.1%	8.4%	32.5%	100.0%

²⁰ As noted earlier, 76%, or 12,945 students were granted an OSSD over the 2004-5 school year according to Trillium, while 16% had already received an OSSD in previous years and 8% had 30 or more credits but had not yet graduated, most because they wished to complete further credits over the 2005-6 school year.

Table 8: Gender and Community Hours

			Community Hours			Total
			No recorded hours	1-40 hours	40 hours or more	
GENDER	F	Count	22526	3694	14920	41140
		% within GENDER	54.8%	9.0%	36.3%	100.0%
	M	Count	29010	3662	13432	46104
		% within GENDER	62.9%	7.9%	29.1%	100.0%
Total		Count	51536	7356	28352	87244
		% within GENDER	59.1%	8.4%	32.5%	100.0%

PART 10: APPLICATIONS OF TDSB STUDENTS TO POST-SECONDARY INSTITUTIONS: A COMPARATIVE ANALYSIS, SPRING 2001 to SPRING 2005

In early Fall 2005 the TDSB received preliminary applications data from the Ontario Universities Applications' Centre (OUAC) and the Ontario College Application Services (OCAS). This was preliminary information about students from the TDSB who applied in Spring 2005 for admission to Ontario universities and community colleges in Fall 2005.

This information was matched with information about 17-21 year olds who were attending TDSB secondary schools in Spring 2005, to determine what percentage of TDSB applicants had been accepted by, and had registered in, post-secondary institutions in Ontario.

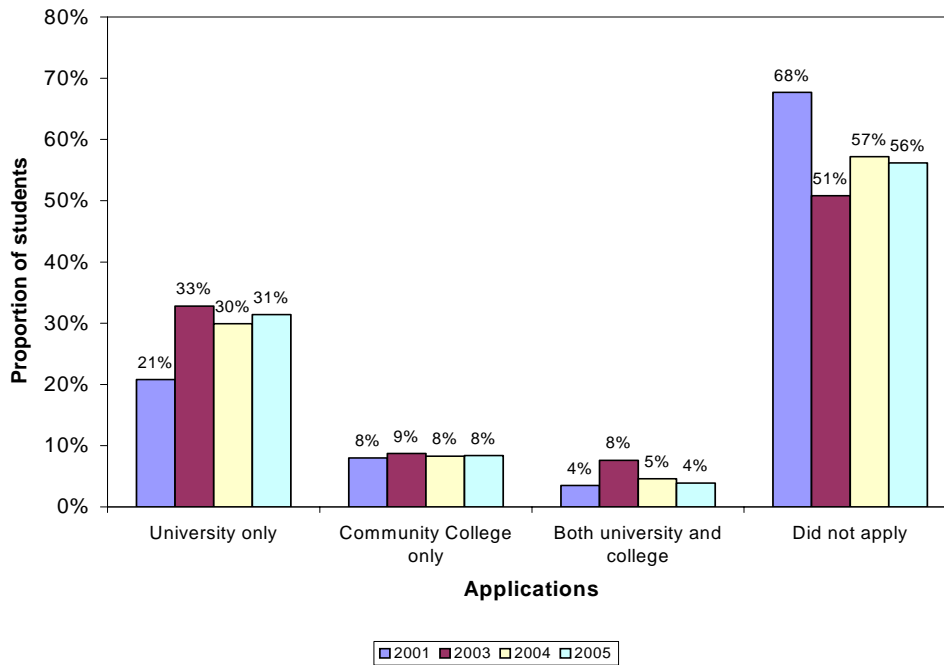
Patterns of applications for Spring 2005 were then matched with similar analyses done for applications from Spring 2001 to Spring 2004. Spring 2005 was the second year, and Spring 2004 the first year, clearly under the OSS curriculum. Students applying in Spring 2003 were doing so during the 'double cohort' of OSS and OS:IS students. Students applying in Spring 2001 were fully under the former OS:IS system. These four years therefore provide a useful basis for comparison.

Every 17-21 year old student attending regular day schools in the TDSB was categorised into:

- Applicants to Ontario university only;
- Applicants to Ontario community college only;
- Applicants to BOTH Ontario university and community college;
- Did not apply to post-secondary in Ontario.

Figure 48 shows the application patterns of all 17-21 year olds. 44% of 17-21 year olds applied to post-secondary in Spring 2005, almost identical to the 43% of 17-21 year olds who applied to post-secondary in Spring 2004, but notably different from the 49% who applied in Spring 2003 and the 32% who applied in Spring 2001.

**Fig. 48 Ontario Post-secondary Applications of 17-21 Year Olds TDSB
Spring 2001, Spring 2003, Spring 2004, and Spring 2005**

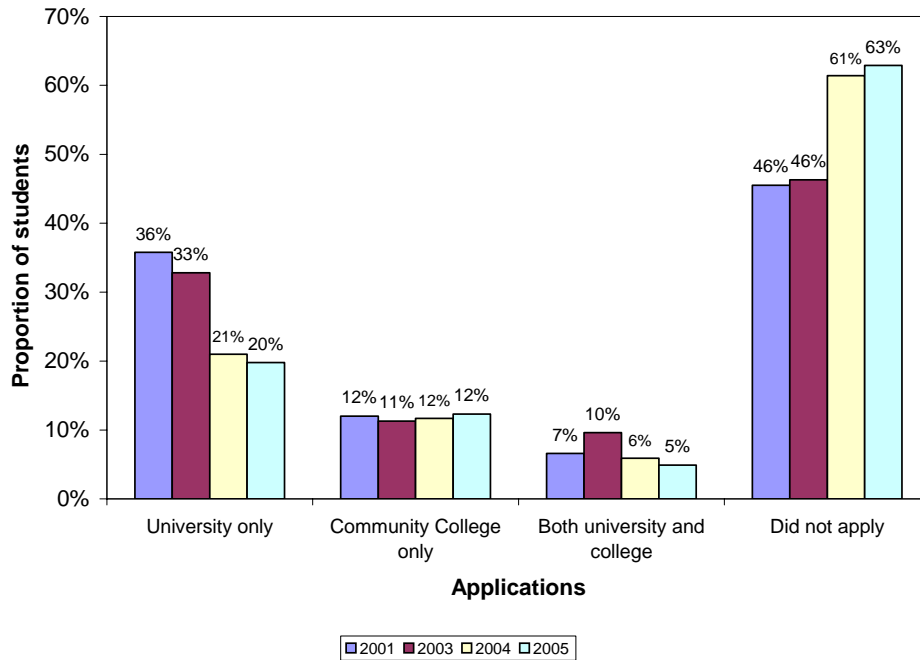


The reason for the changes in 2003 and 2001 can be traced to changes in the OSS curriculum. As chronicled earlier (Brown, 2003) a key characteristic of the OSS versus the OS:IS curriculum centred around the age of university-bound students. Under OS:IS, university-bound students tended to stay for an additional fifth year of high school before going off to university; they would apply as 18 year olds. Under OSS, most university-bound students attended university after four years of high school; they would apply as 17 year olds. The 2001 applications show the OS:IS pattern. In 2003, the ‘double cohort’ of 17 year olds under OSS and 18 year olds under OS:IS gave a misleading impression that the proportion of 17-21 year old applicants had increased. In fact, the 2004 applications show the new OSS curriculum patterns for the first time, a pattern repeated for the most part in 2005.

The difference over time is especially noticeable when applicants are divided by age groups. The proportion of older students (18-21 year olds) who applied to post-

secondary has declined sharply, from 54% in Spring 2001 to 37% in Spring 2005. The greatest decline is in the university-bound (see Figure 49).

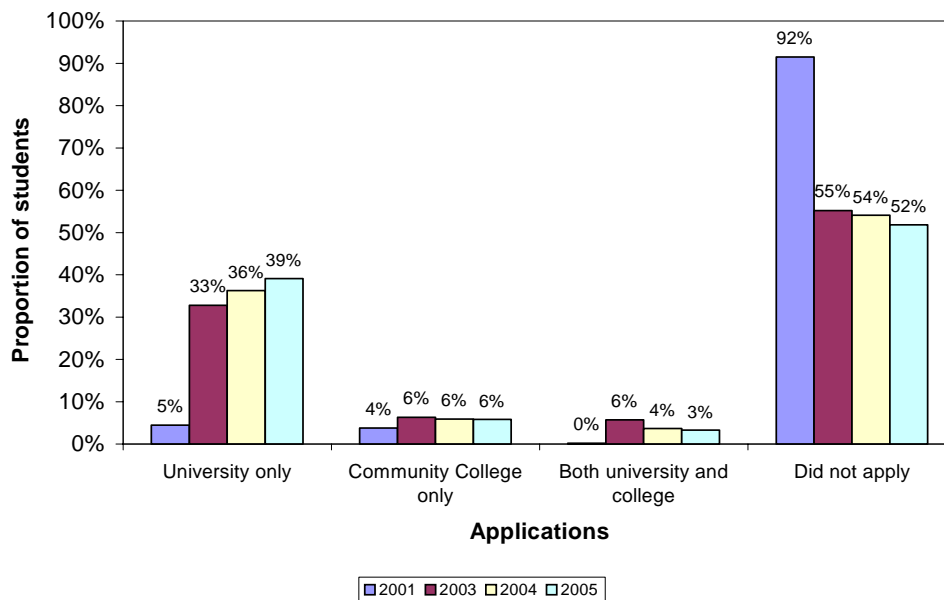
Fig. 49: Ontario Post-secondary Applications of 18-21 Year Olds TDSB Spring 2001, Spring 2003, Spring 2004, and Spring 2005 (DRAFT)



Again, the reason for the decline is curricular change. Under the new OSS curriculum seen in Spring 2004, the majority of students who returned to the TDSB for a fifth year of secondary study were in fact workplace or community-college bound, and therefore much less likely to apply to university. Most of the university-bound had already left the system as 17 year olds.

Figure 50 shows the application patterns of 17 year old applicants, most of who were in Year 4 of secondary study. The major change was from 2001 to 2003, when the proportion of students applying to university increased from 5% to 33%. Since that time the proportion of post-secondary 17 year old applicants has increased from 45% to 48%.

**Fig. 50: Ontario Post-secondary Applications of 17 Year Olds TDSB
Spring 2001, Spring 2003, Spring 2004, and Spring 2005**



Initially, there had been concern that the trend of 17 year old post-secondary applicants would reverse itself—that after the first year, 17-year-old students would be less likely to apply to university after four years, and instead wait for five years as under OS:IS (e.g. Brown, 2005a). There is no evidence of that; instead, it appears that 17 year olds are slightly more likely to apply to university after four years than when the OSS curriculum first started.

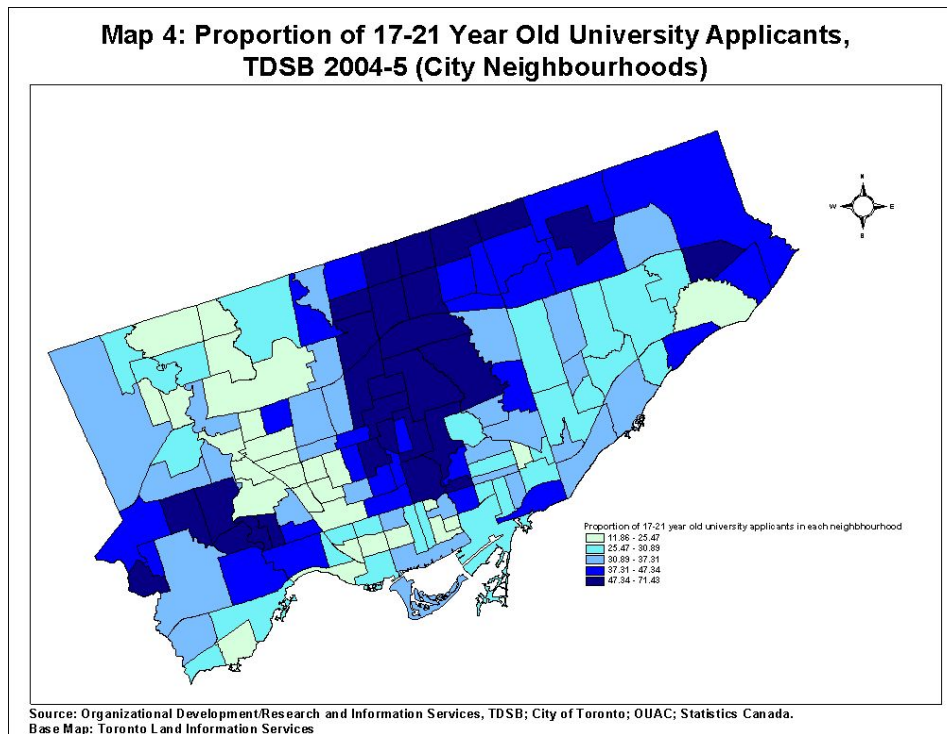
Applications are the first step of the full process of transitions into post-secondary. To see the larger picture, one needs to determine who was accepted into Ontario post-secondary institutions, and who attended university and college in the 2005-

2006 school year. We will receive this information from OUAC and OCAS sometime in mid-2006.

Final information from the students who applied to post-secondary in the previous school year (Spring 2004) is now available, and that can be seen in Part 11 of the report below. As well, students will often apply in multiple years (e.g. in Year 4 as 17 year olds, and then, if unsuccessful, in Year 5 as 18 year olds). To shed some light on this we are examining the Grade 9 cohort of Fall 2000, who would have provided most of the 17 year old TDSB students in 2004 and most of the remaining 18 year old students in 2005. Results of that analysis will be available in an upcoming report (*The TDSB Grade 9 Cohort: A Five-Year Analysis, 2000-2005*).

a. City Neighbourhoods and 17-21 Year Old Applicants to University

As seen in Figure 48, 35% of 17-21 year old students present in the TDSB in Spring 2005 applied to university through the Ontario Universities Applications Centre (OUAC).²¹ Map 4 shows the distribution of applicants according to City of Toronto neighbourhoods, as seen earlier in Maps 1-3.



²¹ This map examines those in Spring 2005 applying to university only (31%) and those applying to both university and community college (4%). It does not look at students applying only to community colleges.

The following neighbourhoods had fewer than 20% of 17-21 year olds present in Spring 2005 applying to Ontario universities:

- Keeleisdale-Eglinton West;
- Rustic;
- Weston-Pellam Park;
- Moss Park;
- Black Creek;
- Corsa Italia-Davenport;
- Caledonia – Fairbanks;
- Oakwood-Vaughan;
- Glenfield-Jane Heights;
- Trinity-Bellwoods;
- South Parkdale; and
- Regent Park.

The following neighbourhoods had more than 50% of 17-21 year olds present in Spring 2005 applying to Ontario universities:

- Bedford Park-Nortown;
- Bayview Woods-Steeles;
- Mount Pleasant East;
- Markland Woods;
- Edenbridge-Humber Valley;
- Bayview Village;
- Lansing-Westgate;
- Banbury-Don Mills;
- Kingsway South;
- Willowdale East;
- Lawrence Park South;

- Rosedale-Moore Park;
- Newtonbrook East;
- St.Andrew-Windfields;
- Hillcrest Village;
- Leaside-Bennington;
- Yonge-Eglinton;
- Princess-Rosethorn;
- Lawrence Park North;
- Forest Hill South; and
- Bridle Path-Sunnybrooke-York Mills.

PART 11: TDSB POST-SECONDARY APPLICATIONS, CONFIRMATION, AND REGISTRATION FOR 2004

Background

In August 2004, preliminary data from the Ontario Universities Applications' Centre (OUAC) and the Ontario College Application Services (OCAS) provided information concerning students who applied in Spring 2004 for admission to Ontario universities and community colleges in Fall 2004. This was matched with information about 17-21 year olds attending TDSB secondary schools in Spring 2004.

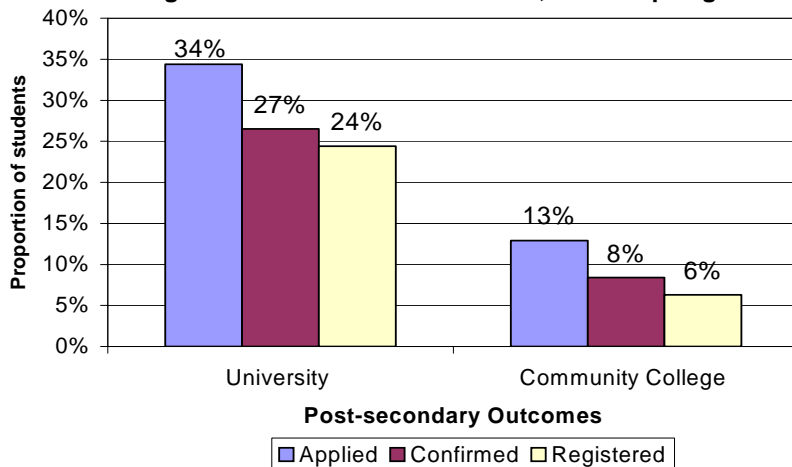
In June 2005, OUAC and OCAS sent 'final' information on these applications: which students had confirmed their acceptance of an Ontario post-secondary program ("confirmation/acceptance"); and which students registered at an Ontario post-secondary institution by the conclusion of 2004.

a. Applications, Confirmation, and Registration at Ontario Post-Secondary Institutions

- 43% of 17-21 year olds in Spring 2004 applied for admission to Ontario post-secondary colleges and universities during 2004 (5% applied to both colleges and to universities).
- While 34% of 17-21 year olds were accepted into an Ontario post-secondary program (and confirmed their acceptance), 31% actually registered in an Ontario post-secondary program by the end of 2004.²²
- 34% of 17-21 year old students applied to Ontario universities (including 5% who also applied to community colleges), 27% were accepted and confirmed this acceptance, and 24% registered.
- 13% of 17-21 year olds applied to Ontario community colleges (including 5% who also applied to universities), 8% were accepted and confirmed this acceptance, and 6% actually registered (see Figure 51).

²² This may slightly undercount the total number of students accepted because it misses students who applied and were accepted at universities and community colleges outside Ontario, and also students who did not notify OUAC and OCAS of their acceptance and of their registration.

Figure 51: Applications, Confirmations (Acceptances) and Registrations of 17-21 Year Olds, TDSB Spring 2004



Figures 52, 53 and 54 show the applications, confirmation and registrations of 17, 18 and 19-21 year olds in 2004. 17 year olds were most likely to apply to university and least likely to apply to Ontario community colleges out of all age groups. 18 year olds were most likely to apply to community college; 19-21 year olds were half as likely to apply to university than 17 year olds. All age groups were more likely to apply to university than to community college.

Figure 52: Applications, Confirmations (Acceptances) and Registrations of 17 Year Olds, TDSB Spring 2004

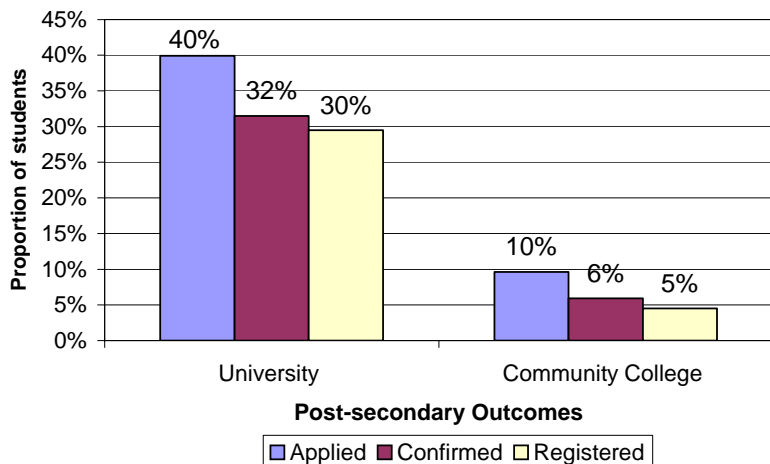


Figure 53: Applications, Confirmations (Acceptances) and Registrations of 18 Year Olds, TDSB Spring 2004

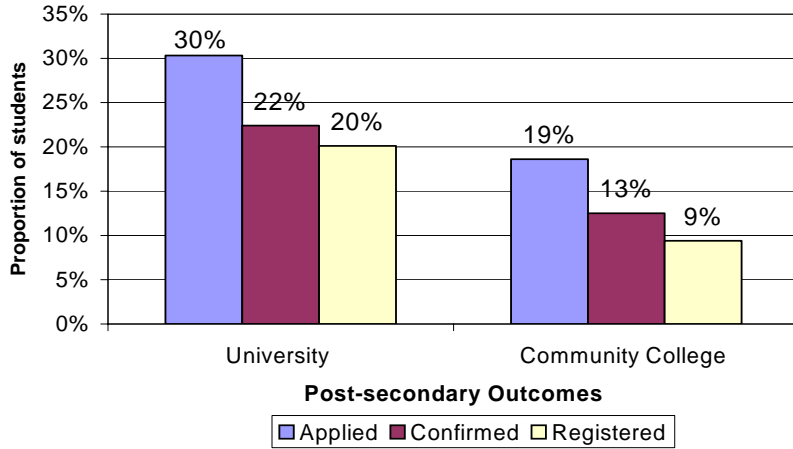
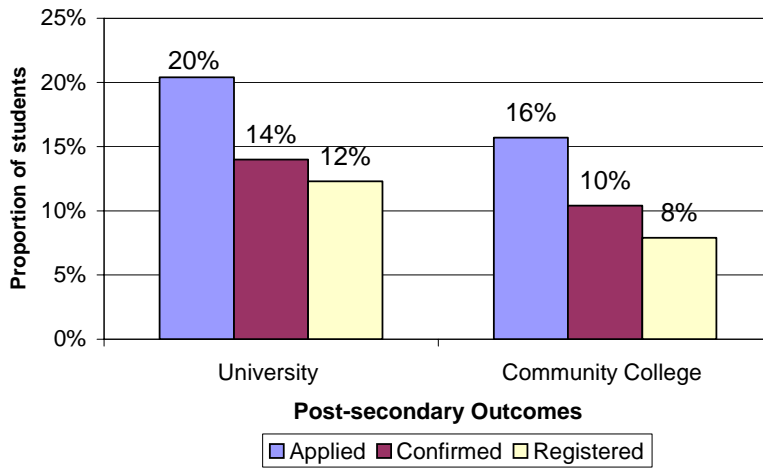


Figure 54: Applications, Confirmations (Acceptances) and Registrations of 19-21 Year Olds, TDSB Spring 2004



b. Registration Rates

The registration rate is calculated as the proportion of students who registered (showed up in 2004) out of the proportion of students who applied to OUAC and OCAS.

Tables 9, 10 and 11 show the registration rates of different ages of TDSB students applying to Ontario colleges and universities in Spring 2001 (the last year of the OS:IS curriculum), Spring 2003 (the 'double cohort' of the new OSS curriculum) and Spring 2004. Of TDSB students who applied for admission to university in Spring 2004, over two thirds (71%) actually did register in Ontario universities. The Spring 2004 rate is slightly higher than that of Spring 2003 (68%) and Spring 2001 (68%). One reason for the slight increase may have to do with the decreased total number of university applicants (10,646 17-21 applicants in Spring 2004 compared to 14,686 in Spring 2003). With fewer applicants trying to get in, it may have been slightly easier to gain acceptance into programs.

The registration rate of community college applicants showed an interesting change over time. With Spring 2001, half of community college applicants who applied, registered at college. With Spring 2003 this declined to 42%, but by Spring 2004 had returned almost to Spring 2001 levels (49%). This may be connected to the 'double cohort' of 2002-3. At the time there was a great deal of uncertainty in the press and in overall discussion about available places in university due to the 'double cohort' of OS:IS and OSS students applying to university at the same time (in fact, as seen, students applying to university in Spring 2003 had the same registration rate as in Spring 2001). Perhaps as a result of that uncertainty, Spring 2003 university-bound students were a bit more likely hedge their bets by applying to both universities and community colleges. However, at the end of the day, most decided to attend university rather than college. In 2004, with the 'double cohort' out of the way, registration patterns returned to their original levels (although the patterns within age groups have altered somewhat).

Table 9: Registration Rates, 17-21 Year Olds, TDSB, Spring 2004

Age	University			Community College		
	Applied	Registered	Registration Rate	Applied	Registered	Registration Rate
17 year olds	40.0	29.5	74%	9.6	4.5	47%
18 year olds	30.3	20.1	66%	18.6	9.4	51%
19-21 year olds	20.4	12.3	60%	15.7	7.9	50%
Total 17-21	34.4	24.4	71%	12.9	6.3	49%

Table 10: Registration Rates, 17-21 Year Olds, TDSB, Spring 2003

Age	University			Community College		
	Applied	Registered	Registration Rate	Applied	Registered	Registration Rate
17 year olds	38.5	26.4	69%	12.1	4.8	40%
18 year olds	50.3	35.6	71%	21.9	9.5	43%
19-21 year olds	21.4	11.8	55%	19.4	8.7	45%
Total 17-21	40.5	27.7	68%	16.6	7.0	42%

Table 11: Registration Rates, 17-21 Year Olds, TDSB, Spring 2001

Age	University			Community College		
	Applied	Registered	Registration Rate	Applied	Registered	Registration Rate
17 year olds	4.7	3.4	72%	4.0	1.9	48%
18 year olds	49.1	34.8	71%	17.6	8.9	51%
19-21 year olds	25.4	13.7	54%	21.2	10.9	51%
Total 17-21	24.3	16.6	68%	11.6	5.8	50%

c. Relationship of Gender and Income to Registration

Table 12 shows that female TDSB students are more likely to attend university than male students (29% to 21%) but were equally likely to attend community colleges (6%).

Table 12: Gender and Postsecondary Registration, 2004

		Postsecondary Registration 2004				Total	
		Attend University 2004	Attend Community College 2004	Apply But Did Not Attend in Ontario	Did Not Apply		
GENDER	F	Count	4040	883	1825	7359	14107
		% within GENDER	28.6%	6.3%	12.9%	52.2%	100.0%
		% within Postsecondary Registration 2004	53.6%	45.5%	48.8%	41.7%	45.7%
M		Count	3497	1058	1918	10282	16755
		% within GENDER	20.9%	6.3%	11.4%	61.4%	100.0%
		% within Postsecondary Registration 2004	46.4%	54.5%	51.2%	58.3%	54.3%
Total		Count	7537	1941	3743	17641	30862
		% within GENDER	24.4%	6.3%	12.1%	57.2%	100.0%
		% within Postsecondary Registration 2004	100.0%	100.0%	100.0%	100.0%	100.0%

As seen in Table 13, students from the lowest income neighbourhoods are less than half as likely to attend university than students from the highest income neighbourhoods.²³ On the other hand, there is no obvious pattern of community college attendance and income.

Table 13: Neighbourhood Income and Postsecondary Registration, TDSB, 2004

			Postsecondary Registration 2004				Total
			Attend University 2004	Attend Community College 2004	Apply But Did Not Attend in Ontario	Did Not Apply	
Deciles of Neighbourhood Income	Lowest Income	Count	356	172	281	1843	2652
		% within NTILES of AVFAMINC	13.4%	6.5%	10.6%	69.5%	100.0%
		% within Postsecondary Registration 2004	4.9%	9.2%	7.8%	10.9%	8.9%
	2	Count	478	162	303	1854	2797
	% within NTILES of AVFAMINC	17.1%	5.8%	10.8%	66.3%	100.0%	
	% within Postsecondary Registration 2004	6.5%	8.6%	8.4%	11.0%	9.4%	
	3	Count	533	165	300	1903	2901
	% within NTILES of AVFAMINC	18.4%	5.7%	10.3%	65.6%	100.0%	
	% within Postsecondary Registration 2004	7.3%	8.8%	8.3%	11.3%	9.8%	
	4	Count	611	203	361	1796	2971
	% within NTILES of AVFAMINC	20.6%	6.8%	12.2%	60.5%	100.0%	
	% within Postsecondary Registration 2004	8.4%	10.8%	10.0%	10.6%	10.0%	
	5	Count	658	175	346	1817	2996
	% within NTILES of AVFAMINC	22.0%	5.8%	11.5%	60.6%	100.0%	
	% within Postsecondary Registration 2004	9.0%	9.3%	9.6%	10.8%	10.1%	
	6	Count	788	200	336	1776	3100
	% within NTILES of AVFAMINC	25.4%	6.5%	10.8%	57.3%	100.0%	
	% within Postsecondary Registration 2004	10.8%	10.6%	9.3%	10.5%	10.5%	
	7	Count	834	213	393	1602	3042
% within NTILES of AVFAMINC	27.4%	7.0%	12.9%	52.7%	100.0%		
% within Postsecondary Registration 2004	11.4%	11.3%	10.9%	9.5%	10.3%		
8	Count	893	221	373	1704	3191	
% within NTILES of AVFAMINC	28.0%	6.9%	11.7%	53.4%	100.0%		
% within Postsecondary Registration 2004	12.2%	11.8%	10.3%	10.1%	10.8%		
9	Count	1050	240	429	1529	3248	
% within NTILES of AVFAMINC	32.3%	7.4%	13.2%	47.1%	100.0%		
% within Postsecondary Registration 2004	14.4%	12.8%	11.9%	9.1%	10.9%		
Highest Income	Count	1102	127	489	1047	2765	
% within NTILES of AVFAMINC	39.9%	4.6%	17.7%	37.9%	100.0%		
% within Postsecondary Registration 2004	15.1%	6.8%	13.5%	6.2%	9.3%		
Total	Count	7303	1878	3611	16871	29663	
% within NTILES of AVFAMINC	24.6%	6.3%	12.2%	56.9%	100.0%		
% within Postsecondary Registration 2004	100.0%	100.0%	100.0%	100.0%	100.0%		

²³ In fact, the relationship of income to university registration is probably stronger than it appears in Table 13. The proportion of students applying but not attending in Ontario is highest among the highest income neighbourhoods; it is quite possible that some of those higher-income students registered at post-secondary institutions outside Ontario, such as McGill or UBC, and were not counted by OUAC as registrations.

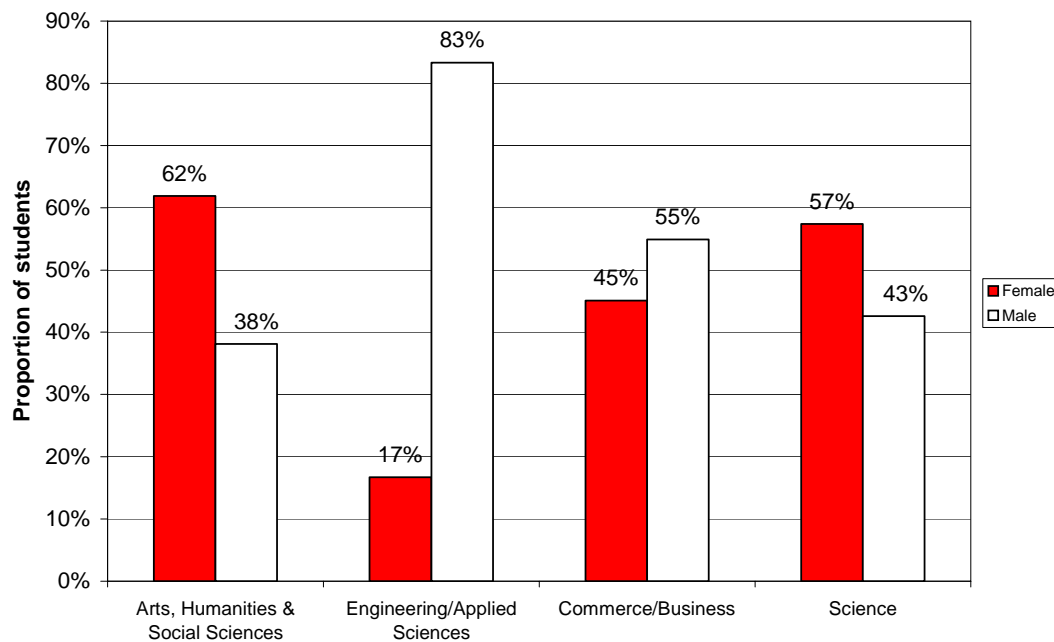
d. University/Community College of First Choice

61% of successful OUAC applicants registered at their university of first choice in 2004, compared to 55% in 2003; 62% of successful OCAS applicants registered at their community college of first choice in 2004, compared to 60% in 2003.²⁴ The increased success rate may have something to do with the smaller number of applicants in 2004.

e. Registration at Ontario Universities by Field of Study

- TDSB students who enrolled at Ontario universities in 2004 were most likely to register in the Arts, Humanities and Social Sciences (34%), Sciences (23%), Commerce, Management and Business Administration (16%) and Engineering/Applied Sciences (11%).
- There were significant gender differences with respect to programs students choose to enroll in. Students enrolled into the Arts/Humanities/Social Sciences programs were more likely to be female than male (62% vs. 38%) while students admitted to Engineering/Applied Sciences were more likely to be male (83% vs. 17%). On the other hand, in programs such as Science and Commerce/ Business Administration, the proportions of males and females were relatively balanced.

Figure 55: University Registration in 2004: Major Subject Areas by Gender

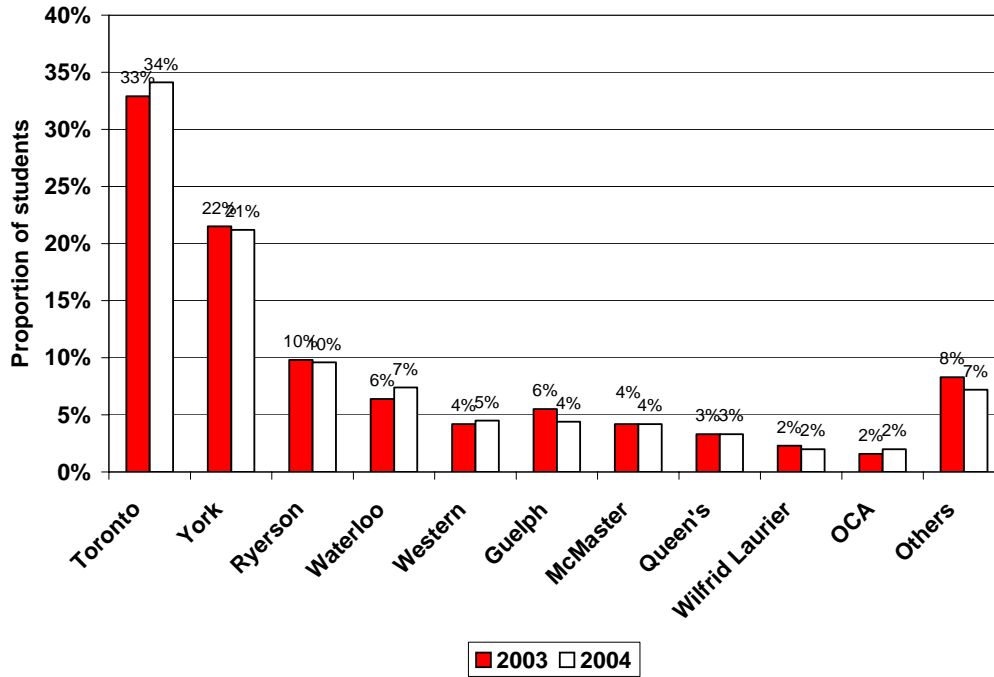


²⁴ Note that students apply to programs within universities and colleges, rather than universities and colleges directly. Therefore, some students might have applied to a program on their first choice and been unsuccessful, attending the same university but a different program within the university than their first choice.

f. Registration at Ontario Universities: Location

- Two thirds of students registered in the four universities located in the City of Toronto: Toronto (34%), York (21%) Ryerson (10%) and the Ontario College of Art and Design (2%).
- Other students most often registered at universities that were also fairly close to Toronto: Waterloo (7%), Guelph (6%), Western (4%), McMaster (4%) Queens (3%) and Wilfrid Laurier (2%).
- As seen in Figure 56, this pattern of registration is almost unchanged from 2003.

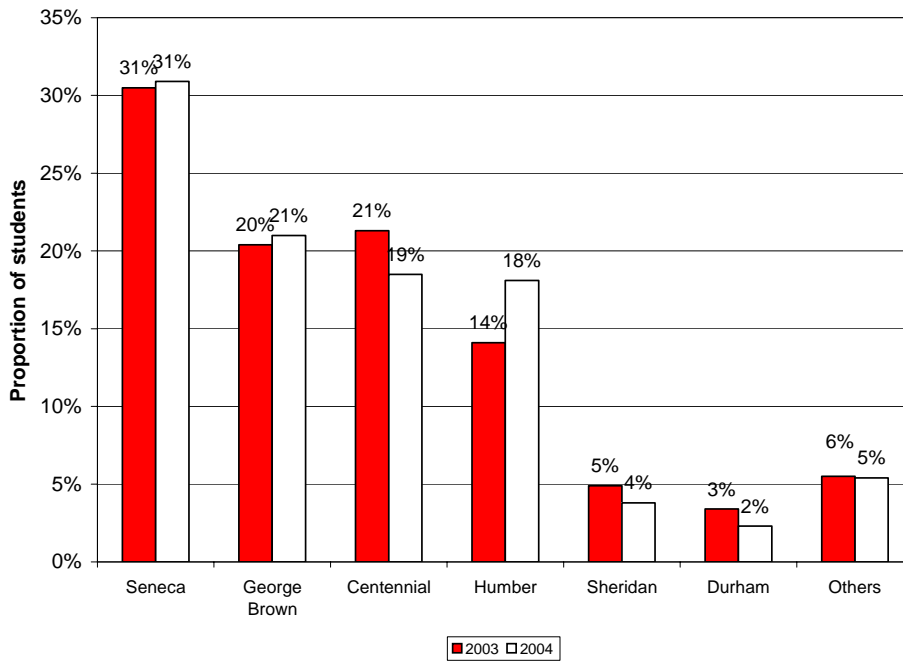
Figure 56: Universities in Ontario Where Students Registered, 2003-2004



g. Registration at Ontario Community Colleges: Location

- Nearly all college students (92%) registered in the five colleges located in or around the City of Toronto: Seneca (31%), George Brown (21%), Centennial (19%), Humber (18%) and Sheridan (4%).
- As with university registration, Figure 57 shows how 2004 college registration patterns are almost unchanged from 2003.

Figure 57 Colleges in Ontario Where Students Registered, 2003-2004



SUMMARY-DISCUSSION

Over the five school years from 2000-1 through 2004-5, the TDSB's annual Secondary Student Success Indicators have documented a modest but consistent increase in student achievement. For example, the proportion of at-risk Grade 9 cohort students (those completing fewer than seven credits by the end of Grade 9) had declined from 20% in 2000-1 to 16% in 2004-5. The proportion of Grade 9 cohort students with no Math credit declined from 18% to 12% over the same period, and similar patterns are seen in Grade 9 English and Science achievement.

The increases are often difficult to measure on a year-to-year basis. Thus, in looking at the credit accumulation patterns of Grade 10 students, we find no change in the proportion of at-risk students between 2003-4 and 2004-5, but the five-year trend shows an overall (if slight) increase in overall credit accumulation patterns (65% of all Grade 10 students had completed 16 or more credits in 2004-5, compared to 62% in 2000-2001).

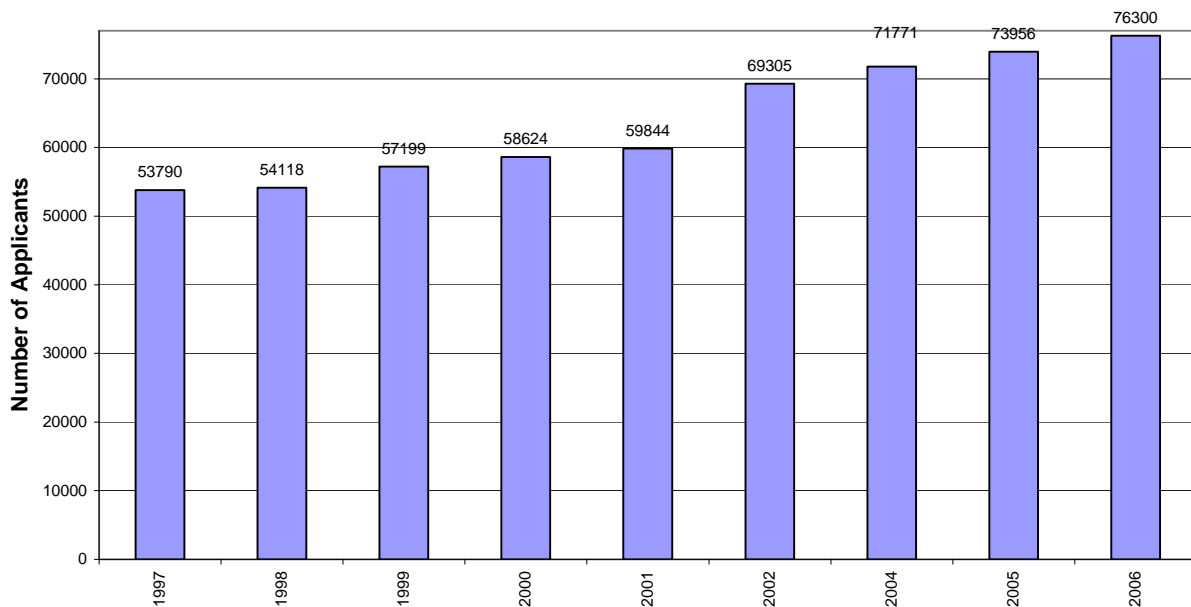
This moderate but notable increase in TDSB achievement is taking place against a backdrop of important educational and social trends: Ontario curricular change; larger North American change in access to post-secondary education; and thirdly, increasing social strain. Each deserves much more detailed analysis than can be provided here, but will be briefly outlined.

1) The TDSB Secondary Student Success Indicators started as Ontario migrated from the former OS:IS curriculum implemented two decades ago, to the new OSS curriculum which was officially implemented in Fall 1999. As is usual in such cases, the changeover was more gradual than predicted (students in the so-called 'first' OSS Grade 9 cohort of Fall 1999 were taking OS:IS courses in their last year of high school in 2002-3) but by Fall 2003 the transition had been complete. Previous research (Brown, 2003, 2004a; King 2004, 2005) has documented little positive influence of the new curriculum. The most clearly documented change we found has been in the university-bound students. Under OS:IS, most finished their secondary diploma requirements in Year 4 of secondary study but usually took an additional Year 5 to complete requirements for admission to university. Under the new OSS curriculum, the university-bound were much more likely to finish their secondary requirements AND their university prerequisites in four years.

The relationship of OSS to graduation and dropout patterns is less clear. The lack of change in the overall dropout rate of 14-19 year olds (at around 6-7% over the five years) does not show a major negative impact. At the same time, the proportion of ‘graduates’ has declined, and the proportion of students returning to the TDSB for an additional year has increased. This superficially indicates a negative impact, but in fact it is an artefact of the curricular change. Because graduating students did not stay around for an additional fifth year to complete university admission requirements, the total number of students is somewhat lower, the total number and percentage of graduates is lower, and consequently, the number of returning students is higher. This could be thought of as good news masquerading as bad news, but there is also a negative side, in that the students most likely to finish in four years rather than five are higher income and socio-economic status, and this increases the risk of social stratification according to time taken to complete school.

2) It is clear that we are in the midst of increasing post-secondary access to education. This has not been discussed in great detail but the evidence is clear. Thus, the number of secondary school applicants to OUAC has increased from 53,790 in 1997 to 76,300 in 2006, an increase of 22,510 or 42% over ten years. The change is not just Ontario-wide but part of a much greater picture (Ontario appears behind most comparable American states, for example).

Figure 58: Secondary Applicants to OUAC, 1997-2006 (2003 excluded)



The intersection of the OSS changes and the larger picture of increasing post-secondary participation have resulted in a somewhat blurred picture. Thus, the proportion of 17 year old students applying to and accepted into university has increased since the implementation of OSS in 2002-3, from 33% to 39%. Whether this is part of the larger post-secondary trend, or a delayed result of OSS, is impossible to say at this time.

3) The time has been one of great social transition. Toronto is a city of great social differences, with extremes of rich and poor. Thus, the neighbourhood (dissemination area) range of family income ranges from \$11,415 at the lowest end to \$1,915,657 at the upper end. But perhaps just as troubling, the extremes show signs of increasing. According to the City of Toronto, the number of City households increased by 22% between 1980 and 2000, but the rate of increase was not uniform. Lower income households increased by nearly 50%, high-income households by 42% and middle income households by only 8%” (City of Toronto, Policy and Research, 2004). Likewise, researchers from the United Way of Greater Toronto have chronicled how the increase in poverty in Toronto has noticeably increased in what are called the ‘inner suburbs’ (The United Way’s *Poverty by Postal Code* reported an “astonishing” 137% increase in the number of poor families of the former City of Scarborough between 1981 and 2001).

Given these developments, the modest increases in TDSB achievement documented in this report are even more encouraging than may appear on first sight. One obvious next question is whether the increasing social polarization is manifesting itself in educational achievement. As has been shown (see below) there are great gaps in achievement amongst the TDSB student population. It is comforting that while the gaps are wide, there is no evidence that they are increasing. Yet this will need to be closely monitored into the future. It may be that the imperfect information available so far, and the comparatively short (five year) monitoring period, cannot show the sorts of patterns seen through twenty years of census data in the United Way’s *Poverty by Postal Code*.

ACHIEVEMENT GAPS

Achievement gaps in the TDSB population have been profiled in other reports (e.g. Brown, 2005a) but are worth summarising here.

Gender

There is a consistent gap between males and females measured throughout all the TDSB Secondary Student Success Indicators. The only exception is EQAO's Grade 9 Math assessment, but this is an artefact of EQAO's Grade 9 Math assessment missing a highly at-risk population—the mostly male students who were not taking Math in Grade 9, or taking locally-developed/Essentials Math courses.²⁵ The difference is clear in the elementary panel (including the Grade 8 Report Card information examined here), and is also seen in information on the Grade 9 cohort, Grade 10 students, 17 and 18 year olds, and applicants to post-secondary.

Age-appropriate versus older students

The Grade 9 cohort most clearly showed that older students are much more likely to be at-risk than students who are age-appropriate. Likewise, older Grade 12 students are less likely to apply to university than age-appropriate Grade 12 students, while the dropout rate of older (18 year old) students was higher, and the graduation rate lower, than age-appropriate 17 year olds.

Mobility

It would appear that students moving in a non-standard or unscheduled way—transferring to schools outside the TDSB, or switching from school to school within the TDSB – were less likely to have achieved as well as students staying in the same school. It is not necessarily the move itself, since students in the authorised Junior High Schools

²⁵ As noted, 1,727 students in the Grade 9 cohort were not included in the EQAO Grade 9 Math assessment. According to the TDSB's Math Success Indicator, most of these are low performing students with 71% at Levels 2 or below. They were also a predominately male group (62%). If these students had been included in an overall Grade 9 Math assessment, the total assessment would have shown that fewer males were at Level 3 and 4 than females.

going from Grade 9 to Grade 10 tend to do better than other TDSB students staying in the same school.

Income

The great disparity between student ‘micro-neighbourhoods’ is evident across all indicators. Thus, for five years, we have linked student residence and the reported average family income of over 4,000 ‘dissemination areas’ of the City of Toronto, and looked at results of students writing the Ontario literacy test (OSSLT) for the first time. In each case, fewer than half of students in the lowest income neighbourhoods passed the OSSLT, while over 80% of students in the highest income neighbourhoods passed the test on their first try. Of students participating in the 2004-5 EQAO Math assessment living in the lowest income neighbourhoods, 38% had achieved at Levels 3 or 4; of students living in the highest income neighbourhoods, 72% had achieved at Levels 3 or 4, almost twice the rate of the lowest-income neighbourhoods.

Previous Academic Achievement

Students with academic difficulties in Grade 8 are much more likely to have academic difficulties in Grades 9 and 10. A 1999-2005 longitudinal tracking study of students assessed by Grade 8 teachers found that assessment in Grade 8 was a very strong predictor of academic performance in high school, as well as graduation, dropout, and post-secondary acceptances (Brown et al, 2006).

Program of Study

Students in the Grade 9 cohort taking Academic courses (according to the majority of courses taken) were more likely to have completed 7 or more credits than other students: 92%, compared to 63% of students taking Applied courses and 53% of students taking Essentials/locally developed courses. Students taking Academic courses were much more likely to do well in Math, English and Science than were other students, a pattern seen over two years.

Neighbourhood

The thousands of Toronto dissemination areas are combined into a total of 140 City of Toronto neighbourhoods based on common historical, demographic, urban and geographical characteristics. They are being used by government, academic, health and community agencies for planning; therefore, City neighbourhoods are becoming the geographical unit that all levels/disciplines are using for urban planning.

The neighbourhood for each 2004-5 secondary student was located using the postal code of student residence. Four variables were examined at the neighbourhood level: proportion of students in each neighbourhood achieving at Levels 3 or 4 in the EQAO Grade 9 assessment; proportion of first-time eligible students passing the literacy test (OSSLT); proportion of 17 year old graduates; and proportion of 17-21 year old applicants to university in 2005. All were related, although the proportion of university applicants had the strongest correlation with each of the other variables. While there were exceptions, in general, the geographical distribution of achievement according to neighbourhoods, tended to reflect to 'U' shape of socio-economic challenge that has been well documented in other studies (e.g. United Way, 2004; Brown, 2005b).

Absenteeism

Absenteeism is an important variable but it should be cautiously examined, in that absenteeism patterns change according to age and grade of students, especially in the secondary panel. The relationship of Grade 9 and 10 absenteeism with achievement (Grade 9 and 10 credit accumulation and OSSLT literacy test results) is very clear: as the absenteeism rate increases, so does the proportion of at-risk students. Students who had more than 10% absenteeism (that is, absent from school more than 1 day every two weeks) were more likely to be at-risk, while the vast majority of students absent from school more than a day a week (above 20% absenteeism) are at-risk. Beyond a certain point, the population of truant students and the at-risk population become one.

Key Languages

Although there are well over 75 languages represented in the TDSB, many languages are spoken by a relatively small number of students. Students in the 2004-5 Grade 9 cohort spoke twenty-one “key” languages, in that 100 or more students in the cohort spoke them (these languages accounted for 91% of the students; half the students in the cohort spoke English only). The language groups with the highest at-risk status in both 2003-4 and 2004-5 were Spanish, Portuguese, and Somali. The proportion of at-risk students in each of these groups declined between 2003-4 and 2004-5.

Immigration and Region of Birth

The relationship of immigration to secondary academic achievement is complex. In general, there is little achievement difference between Grade 9 cohort and Grade 10 students born in Canada or born outside of Canada. However, this hides great differences. Students born in the English-speaking Caribbean, Central/South America/Mexico, and Eastern Africa tend to be more highly at-risk than the average; students born in Eastern Europe, South Asia, and Eastern Asia tend to be less highly at-risk than the average; students born in Canada tend to have average at-risk (at part because most students are born in Canada).

Year of arrival in Canada by itself does not appear to have made a great deal of difference in the overall credit achievement of Grade 9 students. There is a difference in literacy test (OSSLT) achievement. The majority of recent arrivals who actually wrote the test passed, but the difference is in the proportion of students who were deferred. After about 5 years in Canada, the difference in deferment between students born in Canada and those born outside Canada becomes minor. It is usually thought that it takes 5-7 years for students to achieve complete proficiency in English; the pattern of OSSLT seems to mirror this.

RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

1. As has been noted, there are many different definitions of ‘grade’ in the Ontario secondary panel, which has resulted in a great deal of confusion and miscommunication. The same can be said for many other terms, e.g. Special Education and Program of Study. In some cases this is an inevitable result of methodologies, especially around research terms. Thus, there will always be differences in such terms as ‘graduation’ and ‘dropout’ (see Appendix 1). Still, the Ministry of Education, or some other central authority/association (e.g. AERO) would be providing a positive contribution if it could take the leadership in coming up with consistent and implementable definitions of key educational terms (defining grade and program of study would be a good start).

2. This analysis has found that the proportion of students taking Special Education courses appears to be double that of students identified as in Special Education programs. The difference is definitional. The Ministry’s definition includes only students with half or more of programming in self-contained Special Education courses, while many students taking these courses may be taking only one or two courses at a time, and may or may not be officially designated according to the IPRC selection process. Given the very real issues in achievement by Special Education students documented here, it is important to look more clearly at patterns of these various subgroups of Special Education.

3. There are also obvious other areas for future research around Special Education —e.g. the relationship between Special Education and the locally-developed/Essentials program of study, and an examination of demographic and socio-economic variables. Organizational Development/Research and Information Services is working with the TDSB Data Warehouse and with the Special Education department as part of this next stage.

4. There are a number of issues around the EQAO Grade 9 Math and Grade 10 OSSLT test that should be examined by EQAO, the Ministry, and the TDSB in more detail.

Grade 9 Math

4a. Many students taking the EQAO Grade 9 Math course are clearly not Grade 9 students, and many students in Grade 9 are not assessed by the Math test. This is not a problem per se, as much as it is a communication issue, in part related to fluidity in the definition of ‘grade’. However, the lack of assessment of many Grade 9 students is troubling-- many of the most at-risk students are not participating in the EQAO Math assessment, because participation in the assessment is tied entirely to participating in Academic and Applied Grade 9 Math. Since most of these missing students are male, this also provides a slightly skewed version of Math achievement by gender (male achievement in Math would be lower if these students were included).

4b. EQAO’s insistence in releasing Grade 9 Math results only according to Program of Study, and not combining them, can be problematic. There is room for both combined and detailed results, in much the same way that EQAO releases OSSLT results according to both total and Program of Study.

4c. There is a mismatch between the Levels R –4 in EQAO Math and in assessment by teachers. In particular, the proportion of students assessed as Level 4 by EQAO is only a fraction of that assessed as Level 4 by teacher assessment. Previous TDSB research on Grade 6 EQAO and report card achievement found an identical pattern (Brown, 2004b). It is important to explore the reasons for this difference, and to clearly articulate that the achievement distribution of EQAO (in Grade 9 and well as 3/6) does not reflect the distribution of achievement according to teacher assessment. Again, this should not be thought of as a “problem”, but rather as a communications issue.

Grade 10 OSSLT

4d. Organizational Development/Research and Information Services has documented that at least over three administrations of the OSSLT, thousands of students

designated as ‘first-time eligible’ wrote the OSSLT two or (in a few hundred cases) three times. Many if not most, of these students had been deferred or absent in the first/second administration, and are no doubt being considered as ‘first-time eligible’ in good faith. However, this has profound system implications. In 2004-5, less than one fifth of these spurious first-time eligible students passed the OSSLT. Had they been correctly classified as previously-eligible, the OSSLT pass rate of TDSB first-time eligible would have increased from 64 to 67% (Method 1) and 76 to 78% (Method 2).

5. It has been clearly documented in this and previous TDSB research (e.g. Brown, 1993, 1995, 2002) how non-standard moves tend to be closely related to lower achievement patterns. That is, students who change secondary schools in an unscheduled way (e.g., transferring schools after Grade 9 or Grade 10, entering the TDSB after October 31 of the school year, entering the TDSB in Grades 10-12). Organizational Development/Research and Information Services already has a series of cohort studies, following students starting Grade 9 in the TDSB in a specific school year for a total of up to seven years in the secondary panel. The first of these cohort studies, looking at the Grade 9 cohort of Fall 2000, has followed the students to the end of Year 5 (Brown, in press). However, we also need to follow the non-cohort students, students entering the TDSB after the beginning of Year 1/Grade 9. This fits into neither the usual paradigm of cohort studies, nor the annual outcomes as seen in this analysis, but would be a methodological hybrid.

6. Post-secondary success seen in Parts 10 and 11 of this report has examined the transition from secondary to post-secondary over one-year snapshots. We are also examining the transition over multiple years, as part of the TDSB cohort studies (Brown, in press). There is one limitation to this methodology: the information provided by OUAC and OCAS shows students applying in the ‘direct transition’ to post-secondary: that is, they are applying through their most-recently attended school/school board. Some are not physically present in the school at the time (and indeed, many are not in the TDSB at the time they apply to post-secondary; in Great Britain this is normally referred to as a ‘gap year’) yet they have been in the system so recently that they clearly fit into

the established transition process. However, many students also apply to post-secondary at a later period of time, after what is clearly an educational disruption of several years. We know comparatively little about these students. In another study (Brown, in press) we have hypothesised that the proportion of students entering post-secondary in this ‘indirect transition’ would be 10% of the total cohort population—including both students who dropped out of secondary school, and students who graduated but entered the workforce directly. This may be an underestimate. Preliminary analysis of TDSB and OCAS data has found that the number of community college applicants from the ‘indirect transition’ is about the same as the number of ‘direct transition’ applicants. Organizational Development/Research and Information Services is working with OCAS in a pilot investigation of both the TDSB direct and indirect transition over 2003-4 and 2004-5 (Brown and Bell, in progress).

7. This study has several methodological limitations due to the nature of the administrative data collected (see, for example, Appendix 1) but one of the most glaring is the inability to verify exit codes. We know from previous research (Brown and Chan, 1994) that many students who our exit codes say have transferred, have actually graduated; and many students who we have as dropouts, have actually transferred into other educational systems. In part this is because the characteristics of at-risk dropouts and at-risk transfers are so similar that it is difficult to differentiate them. For the most part, at the system level, these two weaknesses tend to cancel each other out. However, this is one piece of information that the Ministry of Education can provide. For well over a decade, board researchers from across Ontario have been urging the Ministry of Education to provide information back to boards on the status of students who have left their DSB through transferring to another DSB. With the Ontario Education Number (OEN) now in use, the Ministry can now have the opportunity to provide information back to the DSB’s. This would be an extremely useful step.

8. On a related note, we currently have very limited information on how our students do once they enter the post-secondary system. There are a number of pressing equity and accountability reasons for DSB’s to work with post-secondary institutions, in

tracking DSB students as they progress through the post-secondary system, in much the same way the Organizational Development/Research and Information Services has been tracking TDSB students in the elementary and secondary panels.

9. This research has found a moderate but consistently positive improvement of secondary student achievement over five years of annual outcomes, while at the same time documenting tremendous socio-economic and demographic diversity. Simultaneously, others have been documenting an increasing social polarity of ‘haves’ and ‘have nots’ within the City of Toronto. The Secondary Student Success Indicators and TDSB secondary cohort studies have now provided a solid baseline for long-term monitoring of the TDSB secondary school system. It will be necessary to examine, in a consistent way, changes between groups over time, to see how the social trends taking place in Toronto interact with TDSB student success.

APPENDIX 1: THE TDSB DROPOUT RATE: SOME ISSUES

Note: this is an update from the original 2000-1 Success Indicators Report (Research and Information Services, 2002). All of the issues discussed in the 2002 report remain valid today.

This rate is determined by looking at 14-19 year old students (age appropriate for Grade 9-OAC) who were in secondary studies in the TDSB in Fall 2004. Their education progress was monitored as of Fall 2005. Students were defined as “graduate” if they had either officially been awarded an OSSD by Fall 2005, or if they had successfully completed 30 or more credits by Fall 2005. Students were defined as “dropouts” if they had not graduated; if they were no longer in the TDSB as of Fall 2005; and if, according to student records, they had not transferred to another educational institution outside the TDSB.

Dropout Rates: Differing Definitions

In their classic overview of dropout methodologies, Ligon et al. (1990) noted that people tend to think there is one common dropout rate, when nothing can be further from the truth:

The public and new media talk about THE dropout rate the same way they refer to THE Cost of Living Index, THE Dow Jones Average, and THE high temperature for the day. They report as if there is a standard definition of a dropout and as if there is a single rate that can be easily or routinely be calculated by some governing body.

However (as Ligon et al. proceeded to demonstrate) there are actually a wide variety of dropout rates producing an enormous range of results. In general, there are two general categories of rates:

Annual rates, looking at the outcomes of a group of students (using most students in a high school system) over a one year period;

Cohort rates, looking at how one group of students did over a period of time (in Ontario, this has traditionally looked at how Grade 9 students have fared over a five year period, from when they started their first year of high school in Grade 9 until after they finished their fifth year).

There are two main sources of information:

From **administrative data**, normally from a board, province's or state's student information system. This has the advantage of being available, but SIS data normally has problems of data quality and data completeness. Therefore, conservative estimates of dropout using administrative data normally overestimate the 'true' dropout. This is the source from which the TDSB dropout rates are predicted.

From **surveys**. This has the advantage of getting a reasonably comprehensive picture of academic success and failure. However, surveys are costly; they are vulnerable to under sampling of some groups and over sampling of other groups; and since they must rely on the truth of the respondents, they risk under-reporting socially undesirable findings. These last two limitations are especially important in considering the results of survey data on dropping out, since dropouts are less likely to respond to and complete surveys, and (perhaps more importantly) since dropping out of school is not a socially desirable characteristic, people being interviewed are less likely to admit to doing so.

Thus, as Ligon et al. found out, there was always enormous differences between results of both types of data. Dropout rates derived from administrative data are always higher than those derived from surveys: administrative data overestimates dropout because many of the students counted as dropouts actually transferred, or later resumed their education someplace else; surveys probably underestimate dropout, in part because some people who have actually dropped out do not like to admit it, even in the confidentiality of survey response.

Even with one common set of administrative data, it is possible to derive wildly different estimates. Thus, one should be very cautious in comparing actual dropout rates, unless there is great confidence that they have been calculated exactly the same way. But this

does not mean that these rates are useless. Rather, the real importance of dropout studies is in 1) determining differences between subgroups (e.g. whether males or females have higher dropout rates), and 2) looking at differences over time. The TDSB Annual Dropout rate of 2003-4 is intended to do both.

Missing Data: Some TDSB Issues

As noted above, it is highly likely that the TDSB annual dropout rate is overestimated. There are a number of reasons for this, some because of the nature of dropouts, some because of the nature of student information systems. Most students do not just suddenly decide to drop out one day, tell the school, and leave the system permanently. In fact, the term 'dropout' is a rather elastic one. Students with high absenteeism will often not so much drop out, as just show up so infrequently that they are written off the system when eventually they do not return. Other students will say they are returning to school at the beginning of the summer, but then not come back in the fall, either because they have dropped out or transferred. Others will say they are transferring to another educational system, but actually drop out. And, of course, many students who drop out of the TDSB will then return to education at a later point in time: in the TDSB day schools, in the adult day schools or in continuing education courses, or in education outside the TDSB. Thus, it is possible for a student to go from one system to another and be categorised as a 'dropout' by one system and a 'new transfer' by another; and for another student to be categorised by the system as a dropout and for the student to think that s/he is still registered in the system.

There was a combined North York/Toronto research initiative in 1994 that demonstrated that, at least at the total Board level, these problems were not as bad as they could have been (see Brown and Chan, 1994). The records of students who transferred or dropped out in one school year were matched with Ministry records from the next school year. It was found that while many students who said they transferred to another Board in Ontario had actually dropped out, this was counteracted to a degree by students who said they were dropping out but had actually transferred to another Board.

Still, it is quite possible that the TDSB dropout rate shown here is overestimated by at least 1% (not including students who had dropped out and will later return to secondary studies). By Fall 2003, all student records in the TDSB were converted to the Trillium SIS system within the TDSB, and most students have been issued a province-wide student number (OEN). In the future, this will enable the successful verification of which students actually transferred to other boards in Ontario, assuming that the information is provided back to DSB's by the Ministry of Education.

APPENDIX 2: STUDENT ACHIEVEMENT, AGE, AND MONTH OF BIRTH: SOME RESULTS FROM TDSB RESEARCH

Does the month in which a student is born affect his or her achievement? Researchers at the TDSB looked at available information at different grades.²⁶

Most students enter the TDSB in Junior Kindergarten, between 3 years 8 months and 4 years 8 months of age. Nearly all are born in the same year (for example, of JK students in the current school year, 99.6% were born in 2001). As most parents and kindergarten teachers know intuitively, research shows a clear relationship between month of birth and school readiness. Children born in the early part of the year (January-March) are much less likely to be at a low readiness level (i.e. potentially at-risk) than those born in the latter part of the year (October-December).

However, when we look at EQAO Grade 6 Math results from Spring 2004, we see a different picture. For one thing, 4% were born in a different year: most of these students were one year older, while about half a percent were one year younger. Although we do not have any information here on why the students are different ages, one reason is that older students had, at some point, been retained or held back in their academic progress by one year, while the small proportion of younger students may have been accelerated.

Figure 1 clearly shows that the key differences were according to *year of birth, not month within that year*. For students born in the age-appropriate year of birth (1992), there is a fairly narrow range of achievement, between 58% and 65%. There is no obvious relationship of month of birth and achievement within this year. In other words, by Grade 6, there is not a great deal of difference in achievement between students born at the beginning of the year and those born near the end.

Figure 2 looks at the relationship of month of birth to credit accumulation among the last year's (2004-5) Grade 9 cohort. These are 13-15 year old students who would be considered highly at-risk if they had completed fewer than 7 credits by August 2005. The pattern seen in Figure 2 is very similar to that seen in looking at Grade 6 EQAO results in Figure 1. Again, students born a year older (1989) were much more likely to be at-risk, regardless of month of birth. The lowest proportion of at-risk students was among those a year younger (born in 1991), regardless of

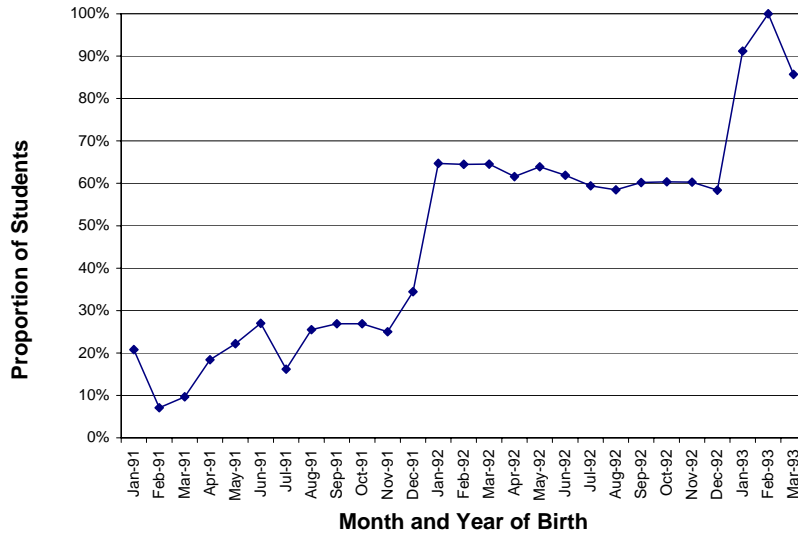
²⁶ This analysis was jointly conducted by Robert S. Brown, Maria Yau and Erhan Sinay, Project Coordinators in Organizational Development/Research and Information Services.

month. Students born in the appropriate year of birth (1990) tended to be at-risk within a fairly narrow range. That is, about the same percentage of students were considered to be at risk (between 14% and 17%) for each month of birth. For example, the proportion of at-risk students born in both January and November 1990 was 16%.

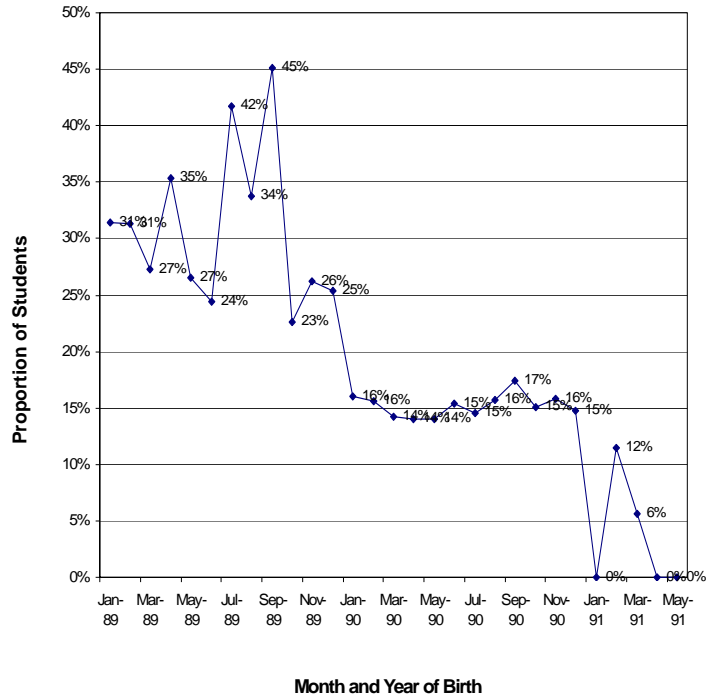
In summary, it does appear that students' time of birth does make a difference in terms of school readiness, when students enter the TDSB as JK students. However, by the time students have finished Grade 6, and certainly by Grade 9, these differences have become minimal; more important is year of birth, with older students being among the most at-risk.

This should be considered preliminary research, and we will be looking at month of birth in future analyses.

**Figure 1:
Month and Year of Birth and 3/4 Achievement in Grade 6 EQAO Math
2004**



**Figure 2:
Month and Year of Birth and Proportion of Grade 9
At-risk Students 2004-5**



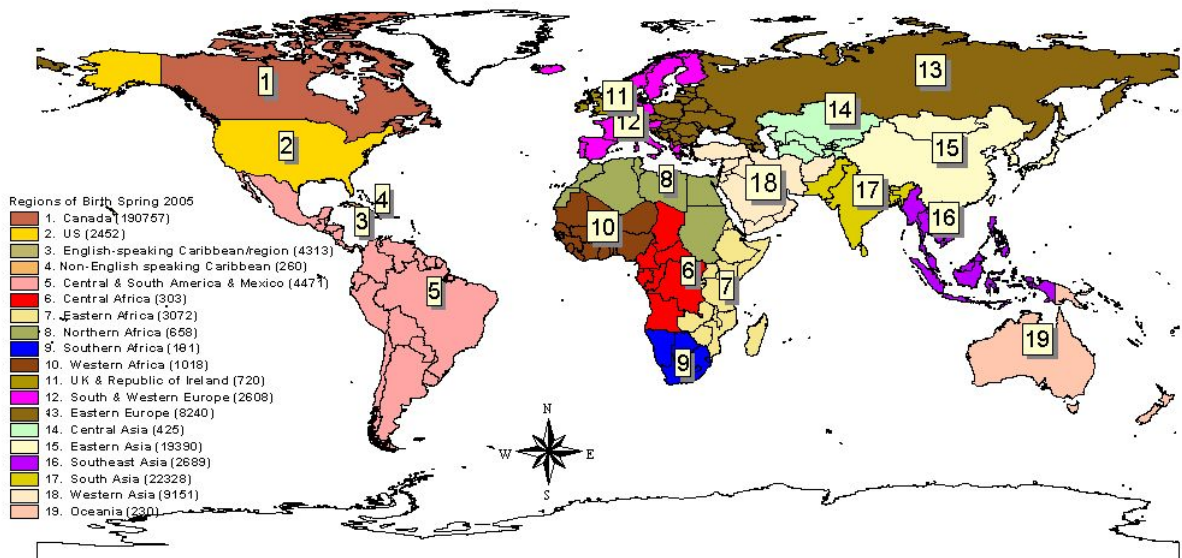
APPENDIX 3: MAP OF TDSB REGIONS OF THE WORLD, SPRING 2005

Background

The base information here is the regions of birth of TDSB elementary and secondary students as of Spring 2005, superimposed on a map of countries of the world. The regions of birth were designed by Research and Information Services in 2000, working with the then ESL District-wide Co-ordinator. The regions, with the number of TDSB students born in each region, are in the legend in the left side of the map.

TDSB Students Regions of Birth (Spring, 2005)

(Number of students born in each region in brackets)



Sources: Research and Information Services/Data Warehouse, TDSB; ESRI

APPENDIX 4: SPECIAL EDUCATION COURSES

In Part 8, students were coded as ‘taking Special Education Courses (excluding Gifted) if they enrolled in any of the specified courses over the regular 2004-5 school year (i.e. up to the end of June 2005 but not including summer school.

Characteristics:

- If the sixth digit of the course code was a “9”;
- If the sixth digit of the course code was a “D”;
- If the first digit of the course code was a “K” (but the course grade was Grade 9 or greater);
- If the first three digits of the course code was “GLE”.

Several of these characteristics are specific to the TDSB, and the selection criteria may well change in the future.

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