Toronto District School Board

Research Report

THE TDSB GRADE 9 COHORT STUDY: A FIVE-YEAR ANALYSIS, 2000-2005

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

The first group of Grade 9 students who could be identified and tracked at the Toronto District School Board level started secondary school in Fall 2000. These were students who were between 13 and 15 and who, according to student records, were new to the secondary school experience in Fall 2000.

They have now finished their fifth year of secondary school, and the remaining students are in Year 6. These are the first students who wrote the Grade 10 OSSLT. They are also the first students completely in the OSS curriculum (many students in the 2002-3 'double cohort' were registered in both OSS and OS:IS courses).

OUTCOMES TO END OF YEAR 5

There were 18,798 students in the initial Grade 9 cohort. In Fall 2000, secondary student information was contained in six different student information systems. By Fall 2004, all student information had been converted into the Trillium SIS system. However, results for 324 students could not be followed over the five-year period. Of the remaining 18,474 students, by Fall 2005:

- 60% of students (11,164 out of 18,474) had graduated (received an OSSD or successfully completed 30 or more credits);
- 7% (1,313) had not graduated but were still in the TDSB in Fall 2005 for Year 6 of secondary studies;
- 12% (2,183) had transferred outside the TDSB to another educational institution;
- 21% (3,814) had dropped out--i.e., left the TDSB without a record of transferring, or without graduating.

Traditionally, cohort studies remove the students who transfer outside the system, since we cannot say what will be the ultimate outcomes of those students. When we remove the 2,183 external transfers, we are left with three categories:

- 69% of students (11,164 out of 16,291) had graduated by the end of Year 5 (received an OSSD or successfully completed 30 or more credits);

- 8% (1,313) had not graduated but were still in the TDSB in Fall 2005 for Year 6 of secondary studies;
- 23% (3,814) had dropped out by the end of Year 5--i.e., left the TDSB without a record of transferring, or without graduating.

The proportion of students returning to the TDSB dropped from 29% at the end of Year 4 to 8% at the end of Year 5; likewise, the proportion of graduates increased 15% between Year 4 and Year 5, and the proportion of dropouts increased 5%. This process will continue until the end of Year 7 (Fall 2007) when, assuming previous cohort trends, students in the cohort would have either graduated, or dropped out of secondary study.

TRENDS

Although we cannot compare this to other previous TDSB cohorts, we can make a limited historical comparison, with students in previous cohorts of the Toronto legacy system. Specifically, we have information on three previous Toronto legacy cohorts, with students starting Grade 9 in Fall 1987, Fall 1991, and Fall 1993. This was compared to students in this Fall 2000 cohort, who first attended secondary schools in the Toronto legacy system. Results are both positive and negative. *The long-term pattern from 1987 to 2000 cohorts is extremely positive, of increased graduation and decreased dropout.* Dropout has increased marginally in the past few years (i.e. from 1993 to 2000 cohorts) but this may be an artifact of the change from the OS:IS to OSS systems, and the number of students leaving in shorter amounts of time.

A more immediate cause for study is in the proportion of students still in the system in Year 6 of secondary school, which includes many of our resilient and/or socio-economically disadvantaged students. This had increased markedly from the 1987 to 1991 and 1993 Toronto legacy cohorts, but is now approximately at 1987 levels (11% to 19% and now at 12% in Toronto legacy schools). Future TDSB cohort studies should be able to provide more information on this trend.

FINDINGS

1. A comprehensive examination of all secondary students will take between 5-7 years from the beginning of secondary studies in Grade 9. In theory, a secondary school diploma should take four years to complete. In fact, while the majority of *university-bound* secondary students appear to have finished after four years, 38% of the Grade 9 cohort returned to the TDSB for Year 5, 29% of whom had not completed their diploma requirements. Students who returned for Year 5 were more likely to be outside the university stream, and somewhat behind in their credit achievement. 9% of the cohort returned to the TDSB for Year 6, most of whom had experienced some sort of dislocation: they had switch schools, changed home residence, or both.

2. The vast majority of at-risk students are clearly identifiable in their first year of secondary study.

At-risk students have a higher representation in some groups of Grade 9 students than others. A number of groups of students were identified as having higher proportions of at-risk students in Year 1 of secondary school (Grade 9), and likewise with a lower proportion of graduates, and/or higher proportion of dropouts, at the end of Year 5:

- those at-risk in Grade 8;
- male students;
- those older than the age-appropriate year of birth when they started high school;
- those from lower income neighbourhoods, but also other identified geographical Toronto neighbourhoods;
- those born in the English-speaking Caribbean, Central and South America/ Mexico, and Eastern Africa;
- those speaking Portuguese, Spanish, and Somali;
- those who had achieved fewer than seven credits by the end of Year 1;
- those who had not completed a Math credit by the end of Year 1, or had a mark of less than 60%;
- those who had not completed an English credit by the end of Year 1, or had a mark of less than 60% (students taking ESL/D courses in Grade 9 had an average range of achievement by Year 5);

- those taking a majority of Applied and locally-developed courses;
- those with high absenteeism.

Some of these characteristics are associated with achievement characteristics, others with demographic and socio-economic characteristics. One should caution that higher representation does not mean causation. Looking at the reasons behind this higher representation is outside the bounds of this study.

3. Student mobility is associated with at-risk status, but this is not the full story. Five successive Secondary Success Indicator reports coupled with this study, have clearly shown that except for junior high students, students who move schools after Grade 9 are more at-risk than those who stay in the same school. Moreover, it was found that school mobility had a much greater association with negative achievement, than changing home residence. However, junior high students moving to a new school in Grade 10 had the same dropout rate, and higher graduation rate, as students in "regular" schools who stayed in the school between Grades 9 and 10. Junior high school achievement shows that it is not the mobility of students 'per se' that is associated with dropout. Instead, poorer academic performance in Grade 9 is associated with moving schools after Grade 9, and this combination is in turn associated with higher dropout rates. It needs to be emphasized that we still do not know if moving these at-risk students from one school to another after Grade 9 is a net plus or minus for the student. This is something that does need careful attention in future research.

4. The majority of students still in school by the end of Year 5 had passed their literacy requirement: 84% had completed the requirement by the end of Year 5, by passing the literacy test (OSSLT) in one of four administrations over four years, or completing the Ontario Literacy Course (OLC) over two years. Most students without their literacy requirement had dropped out, and almost all of the remainder were still in the TDSB in Year 6. Unfortunately, because this is the first Grade 9 cohort followed within the TDSB, we cannot compare these outcomes to previous cohorts. However, at this point, there appears to be limited dropout rate changes in the TDSB annual outcomes before and after the OSSLT was initiated. *Therefore, there is no evidence (at this time)*

that the introduction of the Ontario literacy requirement has had a negative effect on either dropout or graduation.

5. EQAO's Fully Participating (Method 2) results for OSSLT first-time eligible students exclude the most at-risk students. Although OSSLT results of first-time eligible students appear to be a good predictor of at-risk status, the results are not necessarily interpreted in the best way. That is, the public dialogue around OSSLT results centres on "Fully Participating Students" (Method 2), which is a less accurate depiction of at-risk results than "All Students" (Method 1). If one were to generalize, the students failing Reading only or Writing only should be considered moderately at-risk; students who failed *both* Reading and Writing should be considered at-risk; while students who were eligible to write the exam but did not (those who were deferred, or those who were absent during the first administration of the test) should be considered highly at-risk. This has implications for the way that EQAO results are released. Currently, EQAO emphasizes the release of OSSLT first-time eligible results using Fully Participating Students (Method 2)--that is, only the results of students who wrote the test, but excluding the deferred and absent students. Looking at "All Students", or Method 1 (which is the method used in the school-level release of Grades 3, 6 and 9 EQAO results) is a much better summary statistic, in terms of looking at at-risk students.

Furthermore, starting in 2004-5, results of the literacy test are provided only as "Successful" or "Unsuccessful"; those who fail Reading only or Writing only are categorized along side those who fail both Reading and Writing into "Unsuccessful". But as we have seen, this misses extremely important information: those who fail both Reading and Writing are *much more at-risk* than those who fail only one of Reading or Writing. *EQAO may wish to reconsider this strategy of putting all the unsuccessful first-time eligible students into one grouping*.

6. Student Program of Study needs a much more careful examination. The new OSS curriculum was supposed to have removed 'streaming', yet when the students in this (and subsequent) cohorts are categorized according to the majority of completed Grade 9/10 credits, it is found that outcomes of Academic students appear similar to the outcomes of Advanced students under OS:IS, and the outcomes of Applied students

under OSS appear similar to the outcomes of General students under OSS (see, e.g., Brown 1997, Turner 1997). Moreover, three quarters of students taking Academic courses in Grades 9/10 were taking mostly University level courses in Grades 11/12; when the Mixed (College/University) courses are added, the proportion rises to 90%. This should not be thought of in a negative light--in fact, the ideal is that students take courses tailored to their level of study. But it should be realized that the OSS systems appear to have reinvented many of the structures of the old OS:IS streams.

7. Dropout is not a permanent status. A fifth of dropouts in this study had returned to the TDSB at least once by the end of Year 4 and over a quarter had returned at least once by the end of Year 5 of the study. It is quite possible that up to 40% of dropouts might return once, twice or thrice to Ontario education. These students face daunting challenges, and it will be important to follow them over the full length of the cohort study.

8. Releasing school-level information in cohort reports has multiple levels of complexities. Excluding students attending junior high in Grade 9, and those who transferred to a school outside the TDSB, at least a fifth of TDSB cohort students left their first secondary school after Grade 9; many of these students are highly at-risk. If school-level information is to be provided on results over multiple years, is it on the school *first attended* by the student in Grade 9? If so, complexities like the junior high schools need to be considered. Should information be provided on the *school last attended*? If so, it needs to be recognized that many of the students attending the 'last' school did not begin their secondary studies in that school. This is not to say school-level cohort results should be suppressed--rather, the complexities need to be recognized and carefully dealt with.

9. Projections are more of an art than a science, but looking at post-secondary patterns from current information, it seems likely that over half the students in the Grade 9 cohort will make a direct transition from the secondary panel to post-secondary study. Moreover, *around two thirds of students will attend post-secondary institutions at some time,* when the 'indirect transition' is considered--students who leave

the educational system to the workplace and enter the post-secondary panel. This should fundamentally shift the way we think about the secondary panel. In the nineteenth and early twentieth century, elementary school was the highest level of study for most Ontarians; in the twentieth century, this shifted to the secondary panel; in the twenty-first century, it is shifting to post-secondary.

While we are now seeing the transition to post-secondary as the majority direction of Ontarians, we need to see how this works, at least from the information available. First, even under our most optimistic projection, less than half the cohort students will attend *universities*--a fifth will attend community colleges and the rest will go the workplace. *Secondly, only a third of the students in the study made a direct four-year post-secondary transition, while the rest will enter over many years*. Thus, often there will be many years between the last course taken in secondary school, and the first course taken in post-secondary in the students' selected field. Thirdly, while two thirds of our students may enter post-secondary, current research on post-secondary attrition rate suggests that many will not graduate. For the foreseeable future, the secondary panel will still be the highest *completed* level of education for cohort students. Finally, increased use of Internet and job certification programs means that anyone employed in the workplace (whether school leaver, high school graduate or post-secondary graduate) will be continuing their education. The courses will be regulated by workplace or profession rather than the Ministry of Education, but most of the knowledge skills needed for these courses will have been acquired while in the secondary panel. Rather than minimizing the role of the secondary panel, the current trends have increased its importance as *the* key facilitator to students' futures.

We will be continuing to follow the remaining students in this cohort until Fall 2007. In addition, we are also looking at the four succeeding cohorts of Grade 9 students, as they have progressed through the TDSB system, and beyond. Next year's report will examine results so far from three cohorts (Fall 2000, Fall 2001, and Fall 2002) tracked between four to six years.

BACKGROUND

IMPORTANCE OF THE GRADE 9 COHORT OF FALL 2000

The first group of Grade 9 students who could be identified and tracked at the TDSB level started secondary school in Fall 2000. These were students who were between 13 and 15 and who, according to student records, were new to the secondary school experience in Fall 2000.

These are the first students who wrote the Grade 10 OSSLT. They are also the first students completely in the OSS curriculum (many students in the 2002-3 'double cohort' were registered in both OSS and OS:IS courses).

They have now finished their fifth year of secondary school as of Fall 2005. Last year, we wrote an interim report showing the progress of these students at the conclusion of their fourth year. Initially it was thought that under the new OSS curriculum, four years would provide a reasonably complete picture of cohort progress; in fact, almost a third of the students continued into Year 5. (Since many students will also continue into Years 6 and 7, the full cohort study will not conclude until Fall 2007).

CHALLENGES OF THE TDSB STUDENT INFORMATION SYSTEM CONVERSION 2000-2003

When this tracking study started in Fall 2000, the TDSB had seven different student information systems (SIS) in operation: Trillium (which had finished its pilot year in the North York legacy system), East York, Etobicoke, Toronto, Scarborough elementary, Scarborough secondary, and York. Therefore, all information needed to be converted to a common coding system within SPSS for TDSB-wide level analysis. For example, there were six different exit codes in operation, which described reasons for students transferring out of their legacy system.

This has provided a number of limitations on what information is available for analysis, and has also resulted in occasional examples of missing data. As of Fall 2003, all TDSB student information has been on the one common Trillium framework, and this will make future cohort tracking studies easier to implement and maintain.

METHODOLOGY

SELECTION OF THE GRADE 9 COHORT

At this time, there is no consistent flag to determine Grade 9 students who are new to secondary studies (as opposed to students who had started secondary studies in previous school years). The following selection criteria were used:

The initial process selected students in TDSB secondary grades (including the Grade 9's of 10 TDSB junior high schools) between the ages of 13 and 15, who were present in the TDSB in Fall 2000.

Then, the following students were deleted:

- Any student attending a secondary school in the TDSB during March 2000;
- Any student who had completed more than 1 Grade 10 credit by the end of June;
- Any student awarded an equivalency credit by the end of June 2001;
- Any student who had been awarded more than 9 credits by the end of June 2001.

SOURCES OF INFORMATION

Several sources of information have been used to develop the set of indicators of student success:

- Information drawn from the student information systems currently being used in the TDSB, as provided by the Data Warehouse, for the 2003-4 and 2004-5 school years
- Demographic data for all students attending TDSB secondary and junior high day schools (e.g., date of birth, grade, gender, country of birth)
- Exit dates and exit codes of TDSB secondary students over five years
- Snapshots of all TDSB students at various points in time (e.g., Fall 2003, Spring 2004, May 2004, Fall 2004, Fall 2005)
- Transcript data for secondary students (including subject, mark, and credit information on all courses) over five years
- Information on Ontario Scholars and attainment of the Ontario community service requirement for 2003-4 and 2004-5.

- Data on Ontario Secondary Student Literacy Test (OSSLT), intended as a supplement to data as provided by EQAO;
- Similar data provided by the Data Warehouse from the Trillium and legacy systems between March 2000 and Summer 2003, and converted to a common format for analysis purposes;
- Data on TDSB applications, confirmations, and registrations to university, as collected by OUAC (Ontario Universities' Applications Centre) for 2004 and 2005;
- Data on TDSB applications, confirmations, and registrations to community colleges, as collected by OCAS (Ontario College Applications Services) for 2004 and 2005;
- Data from the EQAO Ontario Secondary Student Literacy Test (OSSLT) from the February 2002, October 2003 and October 2004 administrations;
- Family income data from the 1996 Canadian 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 Fall 2000 postal code of student residence)[1].

DESCRIPTION OF THE GRADE 9 COHORT

A total of 18,798 students were identified as starting their Grade 9 studies at the TDSB in Fall 2000. Of these, 18,068 were still present at the end of the school year (June 2001, using the Data Warehouse download of that month). Nearly all (98%) had an identifiable Grade 9 homeroom. Gender distribution was normal: 47.4% female, 52.6% male.

The Grade 9 Cohort demonstrated high mobility. While 79% were identified as elementary students in their legacy SIS system in March 2000, 21%, or over a fifth, were not. Most of these would have come from outside the TDSB, either from other educational authorities in Ontario, or from other countries. Some might have transferred

[1] The cohort started secondary studies prior to the May 2001 Census, and therefore the earlier 1996 Census is used here.

from Grade 8 in one legacy system to Grade 9 in another legacy system, e.g. Grade 8 in Etobicoke to Grade 9 in North York, and thus be given a new student number.

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, 91% were age-appropriate for Grade 9 (born in 1986) while 7% were a year older (born in 1985) and 1% were a year younger (born in 1987).

Grade 9 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 (54%) were born in Canada. Most frequent regions of birth outside Canada were: South Asia (9%), Eastern Asia (8%), Eastern Europe (5%), the English-speaking Caribbean and region (4%) and Western Asia (4%). The region of birth for 8% of students in this cohort could not be identified.

FINDINGS

OVERALL OUTCOMES

There were 18,798 students in the initial Grade 9 cohort. In Fall 2000, secondary student information was contained in six different student information systems. By Fall 2004, all student information had been converted into the Trillium SIS system. However, results for 324 students could not be followed over the five-year period. Of the remaining 18,474 students, by Fall 2005:

- 60% of students (11,164 out of 18,474) had graduated (received an OSSD or successfully completed 30 or more credits);
- 7% (1,313) had not graduated but were still in the TDSB in Fall 2005 for Year 6 of secondary studies;
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Traditionally, cohort studies remove the students who transfer outside the system, since we cannot say what will be the ultimate outcomes of those students. When we remove the 2,183 external transfers, we are left with three categories:

- 69% of students (11,164 out of 16,291) had graduated by the end of Year 5 (received an OSSD or successfully completed 30 or more credits);
- 8% (1,313) had not graduated but were still in the TDSB in Fall 2005 for Year 6 of secondary studies;
- 23% (3,814) had dropped out by the end of Year 5 -i.e. left the TDSB without a record of transferring, or without graduating.

The remaining results will present out of the base of 16,291, that is, once the external transfers have been eliminated.

Figure 1: Grade 9 Cohort of Fall 2000: Results to Year 4 (Fall 2004) and Year 5 (Fall 2005)

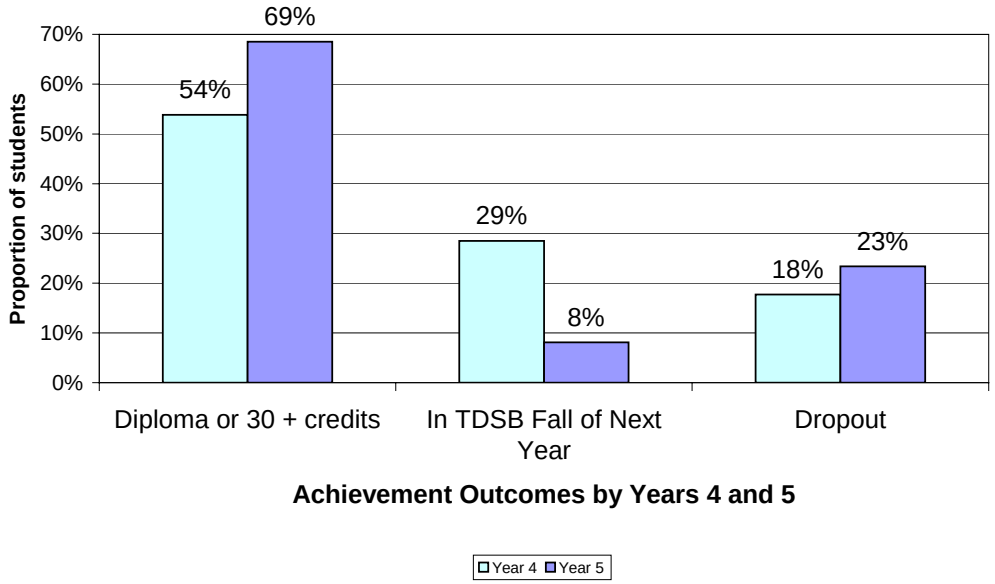


Figure 1 shows outcomes by the end of Year 4 of secondary study (Fall 2004) and Year 5 (Fall 2005). The proportion of students returning to the TDSB dropped 21% from 29% to 8%; likewise, the proportion of graduates increased 15% and the proportion of dropouts increased 5%. This process will continue until the end of Year 7 (Fall 2007) when, assuming previous cohort trends (Brown, 2002) students in the cohort would have either graduated, or dropped out of secondary study.

HISTORICAL CHANGES: THE TORONTO LEGACY COHORTS 1987-PRESENT

Although we cannot compare this to other previous TDSB cohorts, we can make a limited historical comparison, with students in previous cohorts of the Toronto legacy system. Specifically, we have information on three previous Toronto legacy cohorts, using a methodology similar to that of the current TDSB tracking process.[2] These were:

- The TBE Grade 9 cohort of 1987 (13-15 year olds starting Grade 9 in the TBE in Fall 1987, and followed until Fall 1992);
- The TBE Grade 9 cohort of 1991 (13-15 year olds starting Grade 9 in the TBE in Fall 1987, and followed until Fall 1996);
- The TBE Grade 9 cohort of 1993 (13-15 year olds starting Grade 9 in the TBE in Fall 1993, and followed until Fall 1998).

This provides us with a broad historical tracking process, in that the 13-15 year old students from the first cohort are now in their early thirties.

The first cohort of Fall 1987 is a useful benchmark in that it is one of the first years of the OS:IS system; the cohort of Fall 2000 was the first where all curriculum was clearly under the new OSS system. For consistency, information for the Fall 2000 cohort is provided here only for students attending schools in what had been the Toronto legacy system.

Graduation here is defined as either being granted a high school diploma, or achieving 30 or more credits. Dropout is defined as students leaving the school system without graduating or transferring to another educational system.

[2] There were two relatively mild methodological differences between the Toronto legacy (TBE) and TDSB cohort studies. First, the 'cut-off' point for tracking was September 30 of Year 5 of secondary school for the previous Toronto legacy cohorts, and October 31 of Year 5 for the TDSB cohorts; the month difference was due to a corresponding change of Ministry enrolment reporting. Secondly, in the TBE cohorts, students transferring outside the former Toronto board into the five other legacy boards now part of the TDSB (e.g. North York, Scarborough) could no longer be followed, and were removed from the study as 'transfers', whereas these students were followed within the TDSB cohort study.

Analysis

Results are seen in Table 1:

- The years since 1987 have seen marked changes in outcomes of the same TDSB schools from the Toronto legacy system. The graduation rate has consistently been increasing, from 56% to 64% over the same period.
- Dropout declined from 33% to 21% but then slightly increased to 24%.
- The proportion of students still in school in Year 6 of secondary school increased markedly from the 1987 to 1991 and 1993 cohorts, but is now approximately at 1987 levels (11% to 19% and now at 12%).

Table 1: Outcomes of Grade 9 Cohorts at End of Five Years (eliminating students who have transferred): Toronto Legacy System Cohorts of 1987, 1991, 1993, and 2000

Cohort	Graduated (%)	Still in TBE system (%)	Dropout (%)
Cohort of 2000 (to Fall 2005)	64	12	24
Cohort of 1993 (to Fall 1998)	63	17	21
Cohort of 1991 (to Fall 1996)	59	19	22
Cohort of 1987 (to Fall 1992)	56	11	33

There are a number of things going on here: curricular change from OS:IS to OSS; societal changes over 18 years, e.g. an increasing proportion of students entering post-secondary and hence needing high school graduation; and, historical changes in Toronto (e.g. the amalgamation).

One interpretation is that the 1990's witnessed an increase in the proportion of at-risk students continuing into Year 6 of secondary study. This resulted in a dramatic decrease in dropout and a more limited increase in graduation according to successive cohort measurements. With the new OSS curriculum, and its emphasis in earlier graduation, the proportion of 'resilient' students continuing into Year 6 has declined, and the dropout rate has somewhat increased.

There is one very important missing link here--cohort studies were not done between 1993 and 2000 due to limitations of student information systems during the initial years of amalgamation. Therefore it is quite possible that dropout increased during the missing years, but is now in decline. We will have to wait for additional cohort studies using this methodology to determine if dropout will decline or increase. The

'annual' dropout indicators between 2000 and the present have shown no obvious changes, but we should not necessarily conclude that 'annual' patterns reflect the long-term outcomes of students over time.

Conclusion

This is very much a 'glass-half-empty/glass-half-full' sort of finding. *The long-term pattern is extremely positive, of increased graduation and decreased dropout.* Dropout has increased marginally in the past few years but this may be an artifact of the change from the OS:IS to OSS systems, and the number of students leaving in shorter amounts of time. A more immediate cause for study is in the proportion of students still in the system in Year 6 of secondary school, which includes many of our resilient and/or socio-economically disadvantaged students. Future TDSB cohort studies should be able to provide more information on this.

GENDER

Female students in the cohort were more likely to graduate by Fall 2005 (74%, compared to 63% of males) while male students were more likely to still be working on graduation requirements in the TDSB in Year 5 (10% compared to 6% of females) and to drop out (27% compared to 20% of females).

Table 2: Gender and Cohort Achievement to Fall 2005

			Grade 9 Cohort Outcomes Fall 2005			
			Grad or 30+ credits	In TDSB Fall 2005	Dropout	Total
GENDER	F	Count	5792	489	1539	7820
		% within GENDER	74.1%	6.3%	19.7%	100.0%
	M	Count	5372	824	2275	8471
		% within GENDER	63.4%	9.7%	26.9%	100.0%
Total		Count	11164	1313	3814	16291
		% within GENDER	68.5%	8.1%	23.4%	100.0%

STUDENT AGE

Students in the cohort were between the ages of 13 (born in 1987) and 15 (born in 1985), although 91% were age-appropriate at 14 (born in 1986). As seen in Table 3, age-appropriate students (who comprise the vast majority of the cohort) had achievement slightly above total cohort levels by Fall 2005. However, students a year older had approximately half the graduation rate, and nearly twice the dropout rate, of age-appropriate 14 year old students. This is consistent with previous TDSB research (e.g. Brown, 2003). It is probable that many of these older students had been retained (failed by a grade) in the elementary level, and the academic research has been consistent in showing the negative effects of elementary grade failing on future academic achievement (e.g. Roderick, 1995).

Table 3: Age of Student and Achievement to Fall 2005

			Grade 9 Cohort Outcomes Fall 2005			
			Grad or 30+ credits	In TDSB Fall 2005	Dropout	Total
Student Age	15	Count	402	116	582	1100
		% within Student Age	36.5%	10.5%	52.9%	100.0%
	14	Count	10622	1175	3207	15004
		% within Student Age	70.8%	7.8%	21.4%	100.0%
	13	Count	140	22	25	187
		% within Student Age	74.9%	11.8%	13.4%	100.0%
Total		Count	11164	1313	3814	16291
		% within Student Age	68.5%	8.1%	23.4%	100.0%

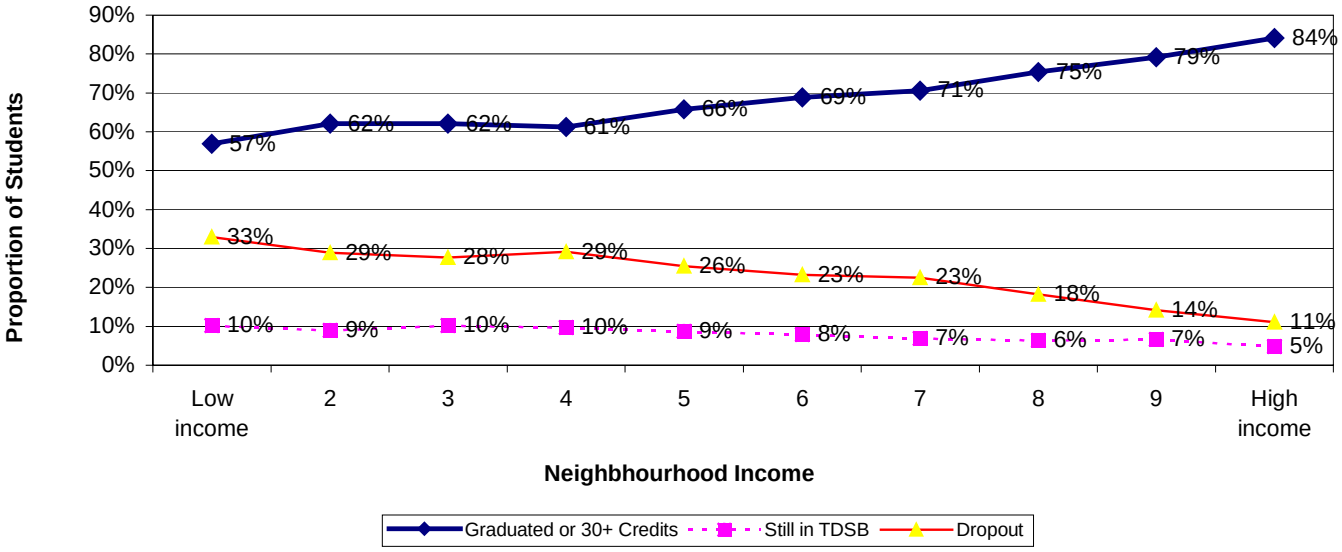
NEIGHBOURHOOD INCOME

We do not have information on the income of student families. However, we can use a 'proxy' variable, the average family income of the neighbourhood in which the student lives. For this study, this was calculated by taking the postal code of where the student lived in Fall 2000, and matching it to the average family income of the student neighbourhood (Enumeration Area) from the 1996 national Census. Students were then divided into ten income groupings, from lowest income to highest income.

The initial Year 1 report on these students (Academic Accountability, 2002) had found that Grade 9 at-risk status was strongly related to income: 30% of Grade 9 students in the lowest income grouping had achieved less than 7 credits by the end of Year 1 (Grade 9), while only 9% of students in the highest income grouping had achieved less than 7 credits by the end of Grade 9.

Not surprisingly, a similar pattern can be seen by the end of Year 5 (Fall 2005). Students in the lowest income grouping had a dropout rate of 33%, three times that of students in the highest income grouping (11%). Students in the lowest income group were less likely to have graduated by the end of Year 4 (57%, compared to 84% of students in the highest income grouping).

Figure 2: Neighbourhood Income and Secondary Achievement by Fall 2005



REGION OF BIRTH

Figure 3 is taken from the original analysis of Grade 9 student outcomes in 2000-2001, showing the proportion of students at-risk using Grade 9 credit accumulation (i.e., students with less than seven credits), and region of birth. The at-risk status with respect to Grade 9 credit accumulation showed a great deal of variability depending on where students were born.[3]

Figure 3: Grade 9 Students With < 7 Credits by Region of Birth

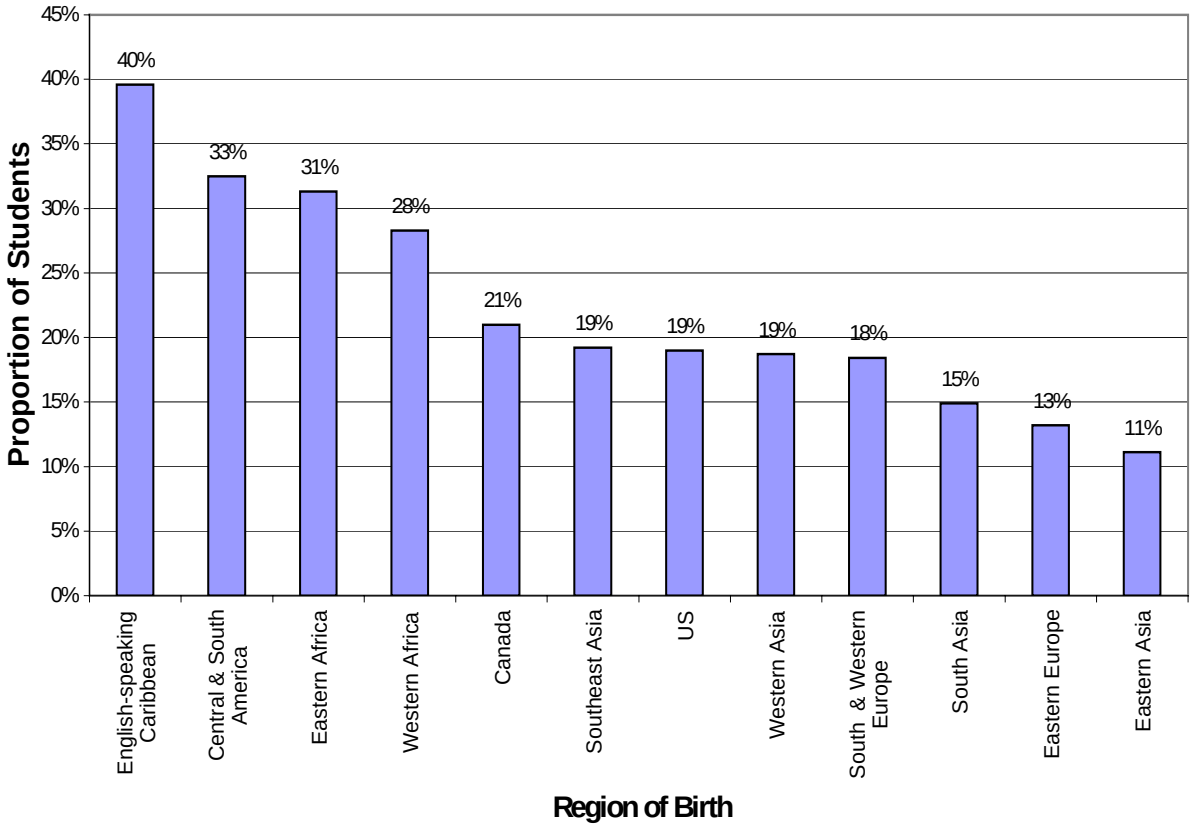
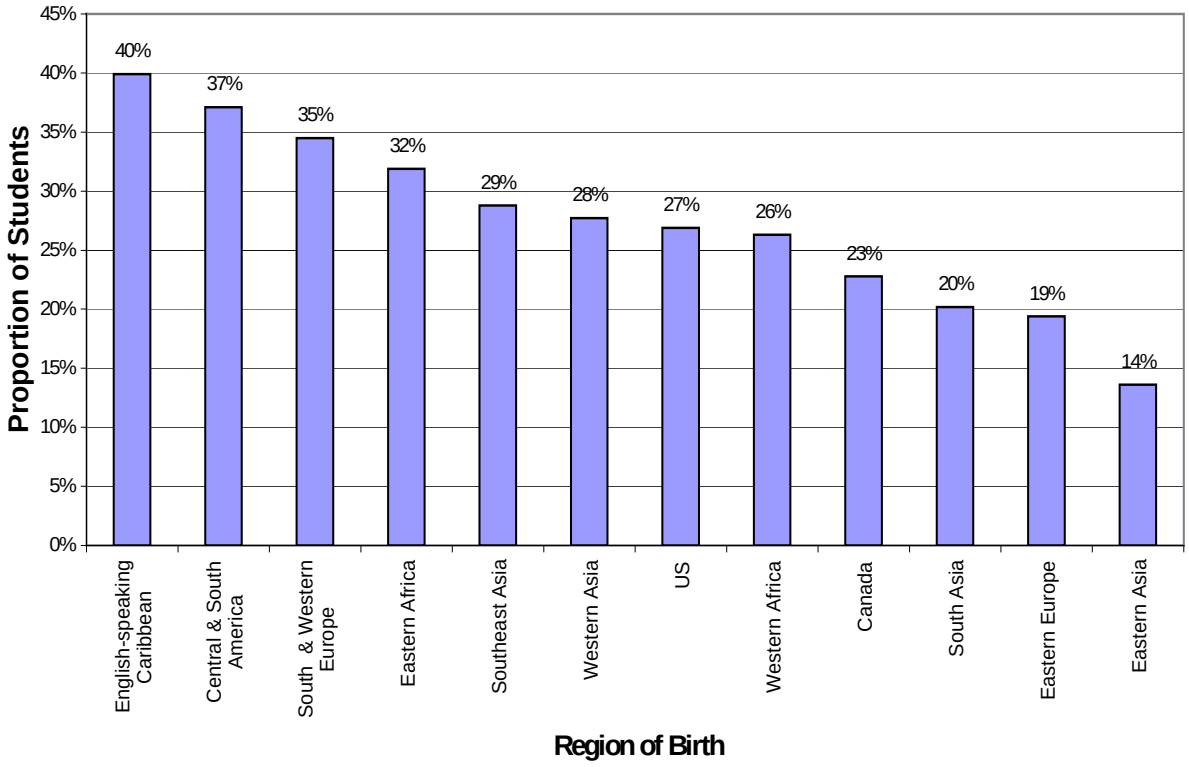


Figure 4 shows dropout of these students by Fall 2005. It can be seen the two regions of birth with the highest proportion of at-risk Grade 9 students (the English-speaking Caribbean, and Central and South America/Mexico) had the lowest proportion of graduates by Fall 2005. The three regions of birth with the lowest proportion of at-risk Grade 9 students (South Asia, Eastern Europe, and Eastern Asia) had the highest

[3] Results for regions of birth with 100 students or more are reported.

proportion of graduates by Fall 2005. Students born in Canada, who had an "average" proportion of at-risk students in Grade 9, had an "average" proportion of graduates by Fall 2004 (understandable given that these comprise the majority of students in the cohort). There are a two rather curious changes: the proportion of at-risk students born in South and Western Europe is below the TDSB average in at-risk by low Grade 9 credit accumulation and well above the TDSB average in dropout, while the proportion of students born in Western Africa was above the TDSB average at-risk by Grade 9 credit accumulation, but only minimally above the Canadian-born students. This would be worth following in future cohorts to see if this unusual development is consistent or an anomaly to this cohort.

Figure 4: Dropout of Cohort by Fall 2005 by Region of Birth



STUDENT LANGUAGES

- There were 17 “key” languages spoken by students in the Grade 9 cohort--that is, 100 or more students in the cohort spoke them. These languages accounted for 90% of the cohort students (14,590 of 16,291). Over half (59%) of students in the cohort spoke English only.
- Students speaking English only had dropout rates at the same level as the full cohort (23%).
- The language groups with the highest dropout rates over the five years of the study were Portuguese (43%) Spanish (39%) and Somali (37%). These are also the three language groups with the highest proportion of at-risk Grade 9 students according to credit accumulation in 2003-4 and 2004-5 (Brown, in press).

Table 4: Key Languages and Achievement to Fall 2005

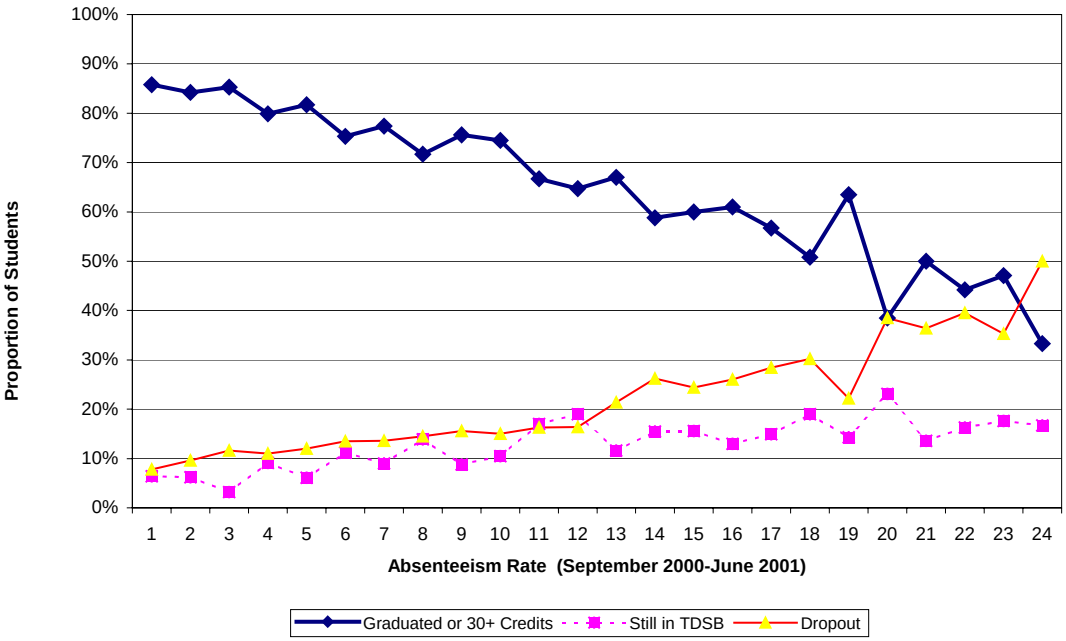
Language	Number of students in the cohort	% of graduates	% in the TDSB in Fall 2005	% dropouts
Arabic	126	64.3	7.9	27.8
Bengali	132	76.5	6.8	16.7
Chinese	1439	82.2	5.8	12.0
English	9668	68.5	8.6	22.9
Greek	124	71.8	10.5	17.7
Gujarati	105	82.9	2.9	14.3
Korean	220	71.8	8.2	20.0
Persian(Farsi)	294	61.9	7.5	30.6
Portuguese	134	47.8	9.7	42.5
Punjabi	185	56.2	9.2	34.6
Romanian	102	85.3	3.9	10.8
Russian	368	76.4	4.1	19.6
Somali	237	52.7	10.5	36.7
Spanish	256	46.9	14.1	39.1
Tamil	599	77.5	5.7	16.9
Urdu	365	72.6	7.9	19.5
Vietnamese	236	62.7	12.7	24.6

ABSENTEEISM OF STUDENTS IN GRADE 9 (2000-1)

Figure 5 shows the relationship between Grade 9 absenteeism in 2000-01, and student progress as of Fall 2005, for students in the Toronto legacy system (N = 3,947).[4] There is a strong relationship between Grade 9 absenteeism and student progress by the end of five years of secondary study, a relationship repeatedly noted in earlier studies (e.g. Brown, 1997).

As Grade 9 absenteeism increases, the proportion of students graduating by the end of Year 5 decreases, and the proportion of students still in the TDSB in Year 6 increases, as does dropout. Students with greater than 10% absenteeism are more at-risk, and students with greater than 20% absenteeism are highly at-risk--again, a pattern noted in other studies (e.g. Brown, 2004b).

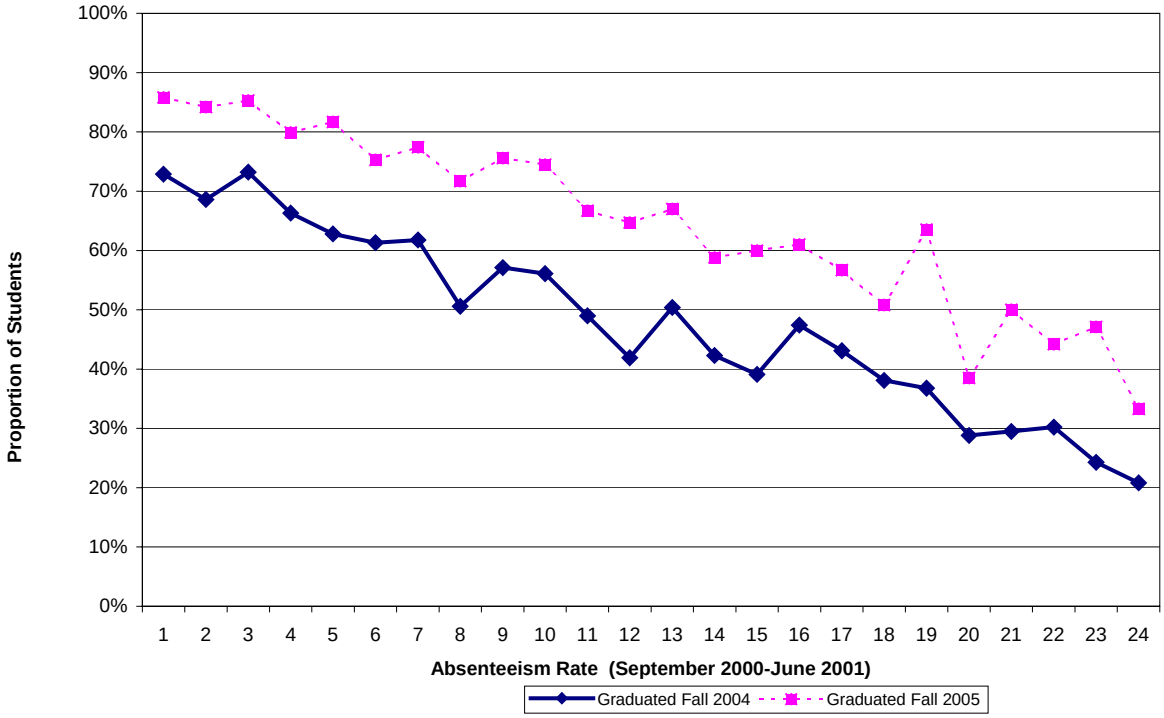
Figure 5: Grade 9 Absenteeism (September 2000 to June 2001) and Secondary Achievement by Fall 2005



[4] As noted earlier, at the beginning of this study in Fall 2000, there were six functioning SIS systems in the TDSB, and absenteeism information was extracted only for the Toronto legacy system SIS system. As of Fall 2003, all TDSB students were on Trillium, and absenteeism data is now extracted from Trillium. Note that absenteeism for 0% is not shown. This is due to a problem in the Toronto legacy SIS system: some schools did not report absenteeism for their students, but the system would report this as 0% absenteeism. This problem has been corrected in absenteeism data in the TDSB Trillium SIS system as of Fall 2003.

In some ways, absenteeism in Grade 9 is even more strongly related to on-time graduation (that is, graduation within four years rather than five years). Thus, the majority of students with absenteeism of 10% or less graduate by the end of four years.

Figure 6: Grade 9 Absenteeism (September 2000 to June 2001) and Graduation by Fall 2004 and Fall 2005

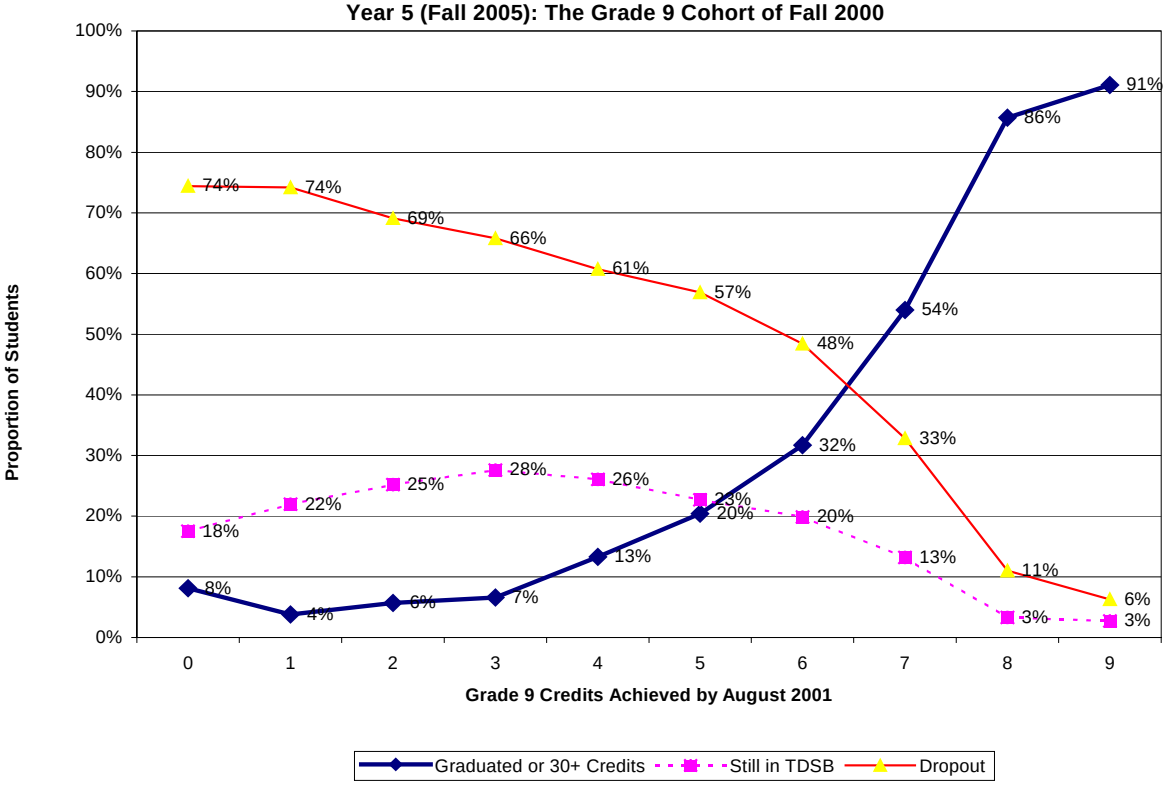


GRADE 9 CREDIT ACCUMULATION

Previous cohort tracking studies from TDSB legacy board research (e.g. Brown 1997, Turner 1997) have demonstrated a close relationship between credit accumulation in the early years of high school, and future academic achievement.

This patterns certainly holds true for the TDSB Grade 9 cohort of Fall 2000. As seen in Figure 5, the vast majority of students who had 8 credits (86%) or 9 credits (91%) had graduated by the end of Year 5 (Fall 2005); little more than half of students who had finished 7 credits by the end of Grade 9 had graduated by Year 5, while less than a third of students who had completed 6 credits by the end of Grade 9 had graduated by Year 5.[5]

Figure 7: Grade 9 Credit Accumulation to August 2001 and Secondary Achievement to Year 5 (Fall 2005): The Grade 9 Cohort of Fall 2000



[5] In the TDSB annual Success Indicators studies, students with 6 or fewer credits by the end of Grade 9 are considered to be highly at-risk, students with 7 or more credits by the end of Grade 9 are considered to be at medium or low

It would appear that the patterns of low credit accumulation, once established, are difficult to break. Thus in Table 5, of students identified as highly at-risk according to low credit accumulation in Grade 9, 96% were also identified as highly at-risk according to low credit accumulation in Grade 10.

Table 5: Grade 9 At-risk (6 or fewer Credits) and Grade 10 At-risk (14 or fewer credits)

			Grade 10 At-Risk Categories		
			Highly At risk (14 or fewer credits by end of Grade 10)	Moderate-low risk (15 or more credits by end of Grade 10)	Total
At Risk (6 or fewer credits) in Grade 9	at risk	Count	2704	108	2812
		%	96.2%	3.8%	100.0%
	not at risk	Count	1698	10535	12233
		%	13.9%	86.1%	100.0%
Total		Count	4402	10643	15045
		%	29.3%	70.7%	100.0%
			100.0%	100.0%	100.0%

MATH PERFORMANCE IN GRADE 9

Students in the cohort were categorized according to Mathematics achievement to the end of Grade 9. There were five categories:

- Students who had not achieved a Math credit by the end of their first year of high school: they had failed, withdrew, or completed only part of a Math credit;
- Students who completed a Math credit with an average mark of 50-59% in their completed Math credits;
- Students who completed a Math credit with an average mark of 60-69%;
- Students who completed a Math credit with an average mark of 70-79%;
- Students who completed a Math credit with an average mark of 80% or more.

As seen in Table 6, the relationship between Year 1 (Grade 9) Math performance and overall academic achievement by the end of Year 4 (Grade 12) was *very* strong. Only 21% of students who had not achieved a Math credit by the end of Year 1 had graduated three years later; this increased to 94% of students who had an average of 80% or more (Level 4).

Table 6: Grade 9 Math Performance and Achievement by Fall 2005

			Grade 9 Cohort Outcomes Fall 2005			
			Grad or 30+ credits	In TDSB Fall 2005	Dropout	Total
Grade 9 Math Performance	Failed or withdrew	Count	658	615	1816	3089
		%	21.3%	19.9%	58.8%	100.0%
	50-59%	Count	2176	379	934	3489
		%	62.4%	10.9%	26.8%	100.0%
	60-69%	Count	2209	168	509	2886
		%	76.5%	5.8%	17.6%	100.0%
	70-79%	Count	2357	94	349	2800
		%	84.2%	3.4%	12.5%	100.0%
	80-100%	Count	3764	57	206	4027
		%	93.5%	1.4%	5.1%	100.0%
Total		Count	11164	1313	3814	16291
		%	68.5%	8.1%	23.4%	100.0%

ENGLISH PERFORMANCE IN GRADE 9

Students in the cohort were categorized according to English achievement to the end of Grade 9. There were six categories:

- Students who had not achieved a English credit by the end of their first year of high school: they had failed, withdrew, or completed only part of a English credit;
- Students who had not completed an English credit by their end of their first year, but had completed an ESL/ELD credit;
- Students who completed an English credit with an average mark of 50-59% in their completed English credits;
- Students who completed an English credit with an average mark of 60-69%;
- Students who completed an English credit with an average mark of 70-79%;
- Students who completed an English credit with an average mark of 80% or more.

Table 7 shows that the relationship between Year 1 (Grade 9) English performance and overall academic achievement by the end of Year 4 (Grade 12) was as powerful as the relationship of Grade 9 Math with overall achievement. Thus, only 12% of students who had not achieved an English credit by the end of Year 1 had graduated; 94% of students with an average of 80 or more (Level 4) in English had graduated.

Table 7: Grade 9 English Performance and Achievement by Fall 2005

			Grade 9 Cohort Outcomes Fall 2005			
			Grad or 30+ credits	In TDSB Fall 2005	Dropout	Total
Grade 9 English Performance	Failed or withdrew English course	Count	241	432	1291	1964
		%	12.3%	22.0%	65.7%	100.0%
	Completed ESL-ELD Course	Count	679	87	301	1067
		%	63.6%	8.2%	28.2%	100.0%
	50-59% in English	Count	1330	376	898	2604
		%	51.1%	14.4%	34.5%	100.0%
	60-69% in English	Count	2219	252	685	3156
		%	70.3%	8.0%	21.7%	100.0%
	70-79% in English	Count	3271	125	442	3838
		%	85.2%	3.3%	11.5%	100.0%
	80-100% in English	Count	3424	41	197	3662
		%	93.5%	1.1%	5.4%	100.0%
Total		Count	11164	1313	3814	16291
		%	68.5%	8.1%	23.4%	100.0%

Students who had completed an ESL/ELD credit by the end of Year 1 (Grade 9) had outcomes slightly below that of students at Level 2 (60-69% in English). For example, the proportion of ESL/ELD students who had graduated by the end of Year 4 was slightly lower, and the proportion of dropouts slightly higher, than students at Level 2--in other words, at the approximate mid-point between Level R (no credit in Grade 9 English) and Level 4 (80% + in Grade 9 English). It would therefore appear that requiring ESL/D in Grade 9 was not in itself an at-risk characteristic--students taking ESL/D courses in Grade had, by the end of high school, achievement representative of all other cohort students.

MOBILITY--SCHOOL TRANSFERS BETWEEN GRADES 9 AND 10

In general, students who transferred to a different secondary school between Grade 9 and Grade 10 (Years 1 and 2) had a much lower graduation rate, and double the dropout rate, of students who stayed in the same TDSB school. However, students who transferred from Grade 9 in a junior high school to a Grade 10 secondary school had the same dropout rate, and a higher graduation rate, of students who stayed in the same TDSB secondary school. It appears that school mobility 'per se' is not the problem; rather, 'at-risk' students are more likely to transfer schools between Grade 9 and Grade 10.

Table 8: School Attended in Grade 10 (Year 2) and Achievement by Fall 2005 (Year 5)

			Grade 9 Cohort Outcomes Fall 2005			
			Grad or 30+ credits	In TDSB Fall 2005	Dropout	Total
School Attended in Grade 10 (Year 2)	Different School in Year 2	Count	408	123	411	942
		% within School Attended in Grade 10 (Year 2)	43.3%	13.1%	43.6%	100.0%
	Same School in Year 2	Count	9683	1074	2589	13346
		% within School Attended in Grade 10 (Year 2)	72.6%	8.0%	19.4%	100.0%
	JHS to HS Transfer in Year 2	Count	991	57	239	1287
		% within School Attended in Grade 10 (Year 2)	77.0%	4.4%	18.6%	100.0%
Total		Count	11082	1254	3239	15575
		% within School Attended in Grade 10 (Year 2)	71.2%	8.1%	20.8%	100.0%

MOBILITY--SCHOOL AND RESIDENTIAL MOBILITY, YEARS 1 TO 4

As seen above, students transferring schools between Grade 9 and 10 had much higher dropout and lower graduation than students staying in the same school, but the example of junior high schools (with higher graduation rates) shows that it is not the movement of schools itself but other factors associated with the move that make the difference.

To shed more light on this, we then looked at school movement and residential movement over time. That is, some students move schools because they have moved residence; others move school when they stay in the same residence, presumably for school-related reasons. Because most students had left by the end of Year 4, we used mobility over four years, and then looked at results as of Year 5 (Fall 2005).

Methodology

We had the school attended by the Grade 9 cohort students in Fall 2000 (Year 1 of the study) and 2003-4 (Year 4 of the study); we also had the six-digit postal code of student residence as of Fall 2000 (Year 1) and 2003-4 (Year 4). There are around 55,000 postal codes in the City of Toronto, and 100,000 in the GTA. For the most part, if the student has the same postal code in Year 1 and Year 4, s/he has remained in the same residence; if s/he has a different postal code, s/he has moved residences (there are a few students who have moved but have the same postal code--these would have been students who moved one or two houses away, or changed from one unit to another in the same apartment complex).

As a final step, students attending junior high schools in Fall 2000 were eliminated. These students would have changed schools in a regular manner, going from feeder JHS schools in Grade 9 to regular high schools in Grade 10, as part of the normal transition process. Therefore, what was left (N = 13,192) would have students who, if they moved schools, had done so in a non-regular transition between Grade 9 and 12.[6]

[6] There were 13,409 students selected as of the beginning of Year 5, but 217 students transferred out of the TDSB to other secondary systems over Year 5. When these students are deleted, we have a sample of 13,192 students who had not transferred out of the TDSB, had not dropped out before Year 4, and were not in TDSB junior high schools.

Results

Out of the 13,192 students, 59% had remained in the same residence and the same TDSB secondary school between Years 1 and 4; 22% were in the same school but had changed residence between Years 1 and 4; 9% were in a different school but were in the same residence; while 10% had changed both school and residence.

From the attached table, it is clear that school mobility has a much greater negative association with student achievement than changing residence. Of students who remained in both the same school and residence, 84% had graduated and 10% had dropped out. Those who remained in the same school but had changed residence had a somewhat lower graduation rate (80%) and somewhat higher dropout rate (14%).

Table 9: School and Residential Mobility Years 1-4, and Fall 2005 Outcomes

			Grade 9 Cohort Outcomes Fall 2005			
			Grad or 30+ credits	In TDSB Fall 2005	Dropout	Total
Total Mobility 2000-1 and 2003-4	Same School Same Residence	Count	6536	445	761	7742
		% within Total Mobility 2000-1 and 2003-4	84.4%	5.7%	9.8%	100.0%
		% within Grade 9 Cohort Outcomes Fall 2005	65.5%	38.9%	36.8%	58.7%
	Same School Different Residence	Count	2367	186	401	2954
		% within Total Mobility 2000-1 and 2003-4	80.1%	6.3%	13.6%	100.0%
		% within Grade 9 Cohort Outcomes Fall 2005	23.7%	16.2%	19.4%	22.4%
	Different School Same Residence	Count	529	242	401	1172
		% within Total Mobility 2000-1 and 2003-4	45.1%	20.6%	34.2%	100.0%
		% within Grade 9 Cohort Outcomes Fall 2005	5.3%	21.1%	19.4%	8.9%
	Different School Different Residence	Count	547	272	505	1324
		% within Total Mobility 2000-1 and 2003-4	41.3%	20.5%	38.1%	100.0%
		% within Grade 9 Cohort Outcomes Fall 2005	5.5%	23.8%	24.4%	10.0%
Total		Count	9979	1145	2068	13192
		% within Total Mobility 2000-1 and 2003-4	75.6%	8.7%	15.7%	100.0%
		% within Grade 9 Cohort Outcomes Fall 2005	100.0%	100.0%	100.0%	100.0%

However, those who had changed schools but remained in the same residence had a *much lower* graduation rate (45%) and much higher dropout rate (34%). Those who changed both school and residence had the *lowest* graduation rate (41%) and highest dropout rate (38%).

Moreover, there appears to be little difference between changing residence over the four years, and returning into the TDSB for a sixth year of secondary study: 6% of students who stayed in both the same residence and the same school, and those who stayed in the same school but moved residence, returned to the TDSB for Year 6. By contrast, 21% of students who moved schools returned to the TDSB in Year 6, regardless of whether they stayed in the same residence or moved residence. Students who changed schools accounted for 45% of all students returning to the TDSB for Year 6 (514 of 1,145) but only 19% of the total population.

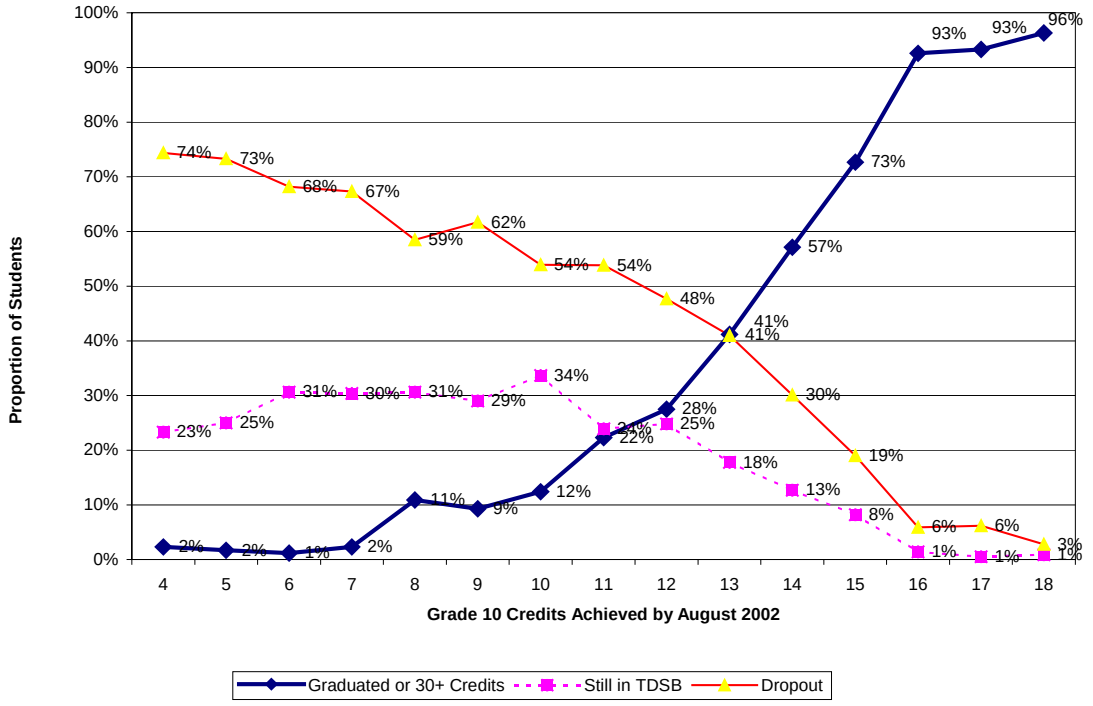
While we do not have reasons for changing residence/school, the information we do have provides a few clear findings. It is evident that changing residence has a relationship with student achievement, but the relationship between changing schools and achievement is much stronger than anything related to changing residences. Furthermore, changing schools is associated with years needed to complete secondary school, yet changing residence does not seem to make a difference to years in school.

Note again, though, that this information misses the most mobile population-those who had left the TDSB by Year 4. Therefore the relationship of achievement with school mobility would probably be greater, had we the complete picture. Also, our previous research has shown that school mobility is associated with achievement, yet changing schools does not necessarily *cause* lower achievement. Instead, in many cases the lower achievement may prompt a move from one secondary school to another. Thus, while moving schools is clearly associated with dropout, it is not yet clear if the move itself is positive, negative, or neutral in terms of its effects on students.

GRADE 10 CREDIT ACCUMULATION

A common phrase in the TDSB is "16 by 16"--that by the end of Grade 10, when most students have turned 16, students who finish 16 credits are most likely to graduate on time. This can certainly be seen in Figure 8. This shows Year 5 (Fall 2005) achievement patterns of students according to their credit achievement August 2002, the end of Grade 10 (Year 2). Nearly all (93%) of students who had achieved 16 credits by the end of Grade 10 (Year 2) had graduated three years later; this dropped to 73% of students with 15 credits, 57% of those with 14 credits, and only 41% of those with 13 credits. The majority of students with 11 or fewer credits by the end of Grade 10 had dropped out by the end of Year 5.

Figure 8: Grade 10 Credit Accumulation to August 2002 and Secondary Achievement by Year 5 (Fall 2005): The Grade 9 Cohort of Fall 2000



Credit accumulation by Grade 10 (Year 2) is an even stronger predictor of 'on-time' graduation by the end of four years. As seen in Figure 9, 81% of students with 16 or more credits by the end of Grade 10 had graduated by the end of Year 4. However, less than half (47%) of students who had finished 15 credits by the end of Grade 10 graduated by the end of Year 4; less than a fifth a students who finished 14 credits by Grade 10 had

graduated by Year 4; and less than 10% of students who finished 13 or fewer credits by the end of Grade 10 had graduated by Year 4.

The majority of students who completed 7-14 credits by the end of Grade 10 (Year 2) had continued into Year 5 of secondary study, and virtually no students with 16 or more credits in Year 2 had continued into Year 6. Thus, continuation into school beyond Year 4 is to a certain extent a function of credit accumulation in the early years of high school (but is also associated with other factors like mobility).

Figure 9: Grade 10 Credit Accumulation to August 2002 and Secondary Achievement by Year 4 (Fall 2004)

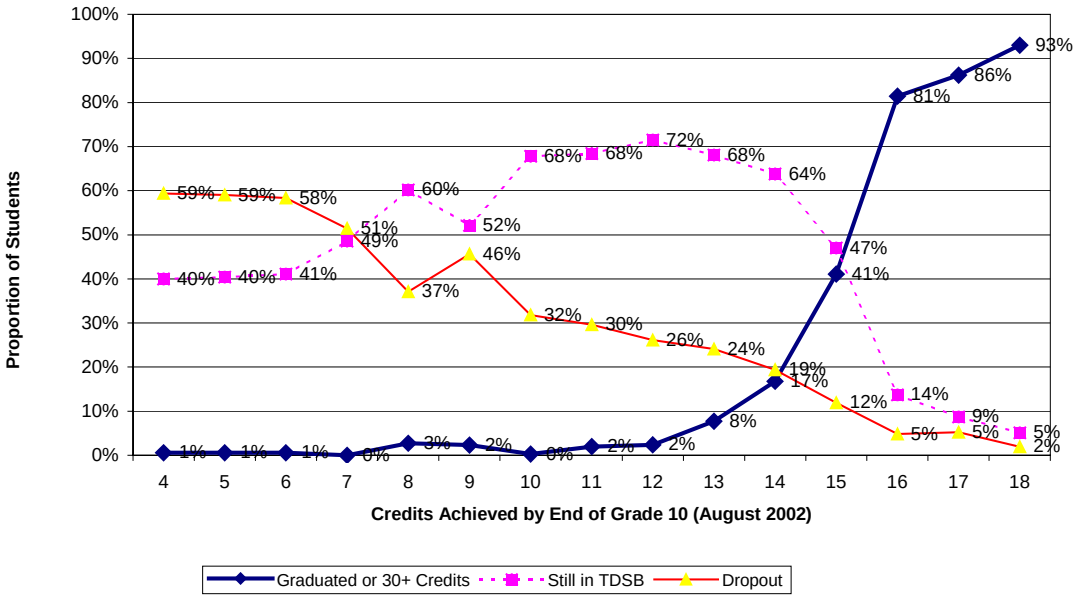
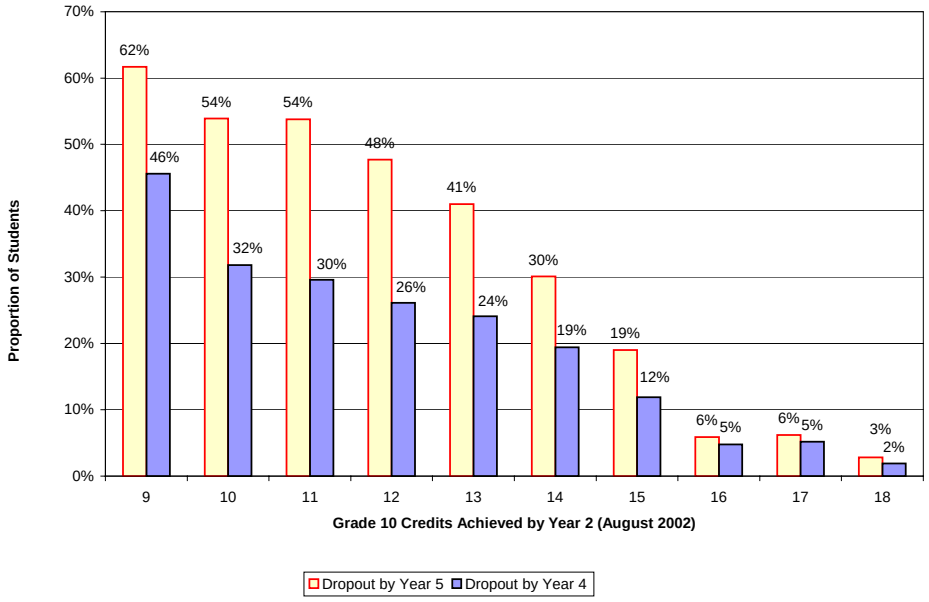


Figure 10; Dropout Rate of Grade 10 Students Based on Credit Accumulation
Dropout Rate by Year 5 (Three Years After End of Grade 10) and Year 4 (Two Years After Grade 10)



ONTARIO SECONDARY SCHOOL LITERACY RESULTS

The first formal administration of the Grade 10 literacy test (OSSLT)--that is, where results served as an exit requirement for high school graduation--took place in February 2002, when students in the cohort were in the middle of Year 2 (Grade 10). To satisfy their literacy requirement, students needed to pass both the Reading and the Writing components of the test. Students who failed one or both of the components had the option of rewriting the test in future administrations (2002-3, 2003-4, or 2004-5), or passing the Ontario Literacy Course (OLC) in 2003-4 or 2004-5.

Excluding transfers, 84% of students in the Grade 9 cohort had completed their literacy requirement as of the end of Year 5 (Fall 2005)--that is, they had passed the OSSLT in one of four administrations, or they had successfully completed the Ontario Literacy Course (OLC) over two school years.

Of the students who had not completed their literacy requirement, the vast majority (82%) had dropped out by the end of Year 5 (Fall 2005), while 15% were still in the TDSB in Year 6.

This left 67 students (4/10 of 1% of the total cohort) of those who had not completed their literacy requirement, with the somewhat contradictory outcome of having completed their diploma requirements without having completed their literary requirements.[7] Given the many data issues outlined above, this is well within measurement error of this cohort. Therefore, there is no substantive evidence that the administration of the OSSLT resulted in students who had their graduation requirements completed but were unable to graduate due to the lack of a literacy requirement.

[7] In fact, a further examination shows that 19 of these students were still in the TDSB in Year 6 while 7 were attending post-secondary schools, leaving 41 students (3/10 of 1%) with this discrepancy. There are three possibilities for this: that the student had completed 30+ credits but had not competed all the mandatory credits needed for graduation; that the student actually did complete the literacy requirement but the information was not collected here; or that the student had all the necessary prerequisites for graduation except for the literacy requirement. Only the third would be problematic in terms of the OSSLT . Given the data issues outlined, it is quite possible that a few of the 41 students out of over 18,000 may fit into the third possibility, i.e. have all other graduation requirements except for literacy, but it is not possible to tell. The question of whether the OSSLT increased cohort dropout cannot accurately be answered here. As noted earlier, however, overall *annual* TDSB dropout has not changed in the TDSB since the OSSLT was introduced.

ADMINISTRATION OF THE OSSLT IN GRADE 10 (FEBRUARY 2002) AND LITERACY RESULTS AS OF YEAR 5 (FALL 2005)

Student-level data from the first administration of the Grade 10 literacy test (OSSLT) in February 2002 were provided back to the TDSB by EQAO. However, there were no student numbers or other numeric identifiers to match students. Therefore, a manual matching process was initiated. The match process was by no means perfect, due to spelling differences or missing information in such existing identifiers as student name. In addition, students identified as "absent" for the test were also more likely to have left the TDSB, making a match with administrative data more difficult. Of students in this Grade 9 cohort who were also in the TDSB in Grade 10, 82% were matched. This does enable us to draw a number of important conclusions about this first OSSLT.

As noted above, the vast majority (84%) of students in the cohort had completed their literacy requirement by Fall 2005. While the majority had passed the OSSLT with the first administration, others completed the requirement through subsequent administrations, or through passing the literacy course (OLC). However, there were pronounced differences in final literacy completion patterns between those who did not pass the OSSLT the first time. As seen in Table 10, only a comparatively small proportion of those who failed one of the two components in February 2002 had not yet passed the literacy component by Fall 2005: 10% of those who failed their Reading component in February 2002, and 8% of those who failed their Writing component in Fall 2002, had not yet completed the literacy requirement by Fall 2005. By comparison, a quarter of those who failed both Reading and Writing in February 2002 had not yet completed their literacy requirement by Fall 2005.

However, over 40% of students absent during the February 2002 administration had still not completed this requirement by Fall 2005. And almost half of those deferred from writing the test in February 2002 (48%) had not yet completed the requirement by Fall 2005. *This appears to indicate that of first-time eligible participants in the OSSLT, the most 'at-risk' students are those who did not write the test, rather than students who wrote the test and failed it.*

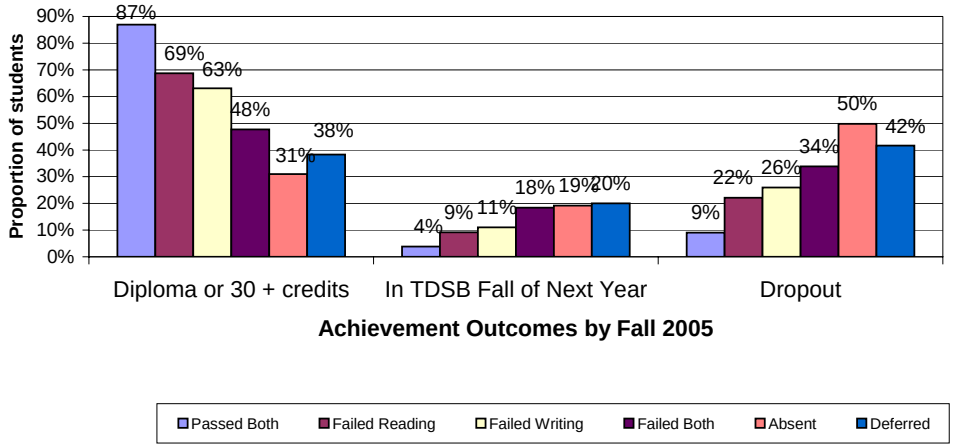
Table 10: Results of First Administration of OSSLT (Feb 2002) and Literacy Requirement Status Fall 2005

			Literacy Requirement Status as of Fall 2005		
			Literacy Requirement Complete	No Record of Finishing Literacy Requirement	Total
OSSLT Results from Feb 2002	Passed both	Count	8539	0	8539
		% within Grade 10 Results Numeric	100.0%	.0%	100.0%
	Failed Reading	Count	1017	110	1127
		% within Grade 10 Results Numeric	90.2%	9.8%	100.0%
	Failed Writing	Count	546	47	593
		% within Grade 10 Results Numeric	92.1%	7.9%	100.0%
	Failed both	Count	983	333	1316
		% within Grade 10 Results Numeric	74.7%	25.3%	100.0%
	Absent 1 Day	Count	144	99	243
		% within Grade 10 Results Numeric	59.3%	40.7%	100.0%
	Absent 2 Days	Count	37	33	70
		% within Grade 10 Results Numeric	52.9%	47.1%	100.0%
	Deferred	Count	381	348	729
		% within Grade 10 Results Numeric	52.3%	47.7%	100.0%
	Exempted	Count	1	20	21
		% within Grade 10 Results Numeric	4.8%	95.2%	100.0%
Total		Count	11648	990	12638
		% within Grade 10 Results Numeric	92.2%	7.8%	100.0%

ADMINISTRATION OF THE OSSLT IN GRADE 10 (FEBRUARY 2002) AND ACHIEVEMENT BY FALL 2005

Figure 11 shows the four-year achievement of students who participated in the February 2002 OSSLT. Earlier research (e.g. Brown, 2003) had found a strong relationship between OSSLT performance and student achievement during that year, in such things as Grade 10 marks and credit accumulation. This relationship is perhaps even stronger two and a half years later. Students who completed the OSSLT the first time around are most likely to have graduated (87%) and least likely to still be in the TDSB in Year 5 (4%), or to have dropped out (9%).

Figure 11: Grade 9 Cohort of Fall 2000: First OSSLT Test Results and Achievement by Year 5 (Fall 2005)



Students who had not participated in the first OSSLT administration were also the students most likely to be at-risk: 50% of students absent from the OSSLT, and 42% of deferred students, had dropped out by Fall 2005, compared to 22% of those who failed Reading, 26% of those who failed Writing, and 34% of those who failed both Reading and Writing. Thus, while failing the OSSLT appears to be an indicator of *moderate* at-

risk status, being eligible for the OSSLT but not writing it (either being absent or deferred[8]) is an indicator of *high* at-risk status.

This has implications for EQAO programming and reporting. Given that first-time eligible students not writing the OSSLT (absent or deferred) appear to be more at-risk than those failing the OSSLT, these students should be carefully monitored so that they do not fall 'between the cracks'[9]. As well, the policy of releasing school and student level information using EQAO's "Fully Participating (Method 2)"--which excludes absent and deferred student results--should be reassessed. That is, given that Fully Participating (Method 2) excludes the most at-risk students, if used by itself and without context, it may provide a misleadingly positive appraisal of OSSLT student performance.

PROGRAM OF STUDY (GRADES 9/10)

Under the new OSS curriculum, courses in Grades 9 and 10 were offered with three programs of study: Academic, Applied, and Essentials (locally-developed). Students in the Grade 9 cohort of Fall 2000 were the first to take their courses totally within the new OSS curriculum.[10]

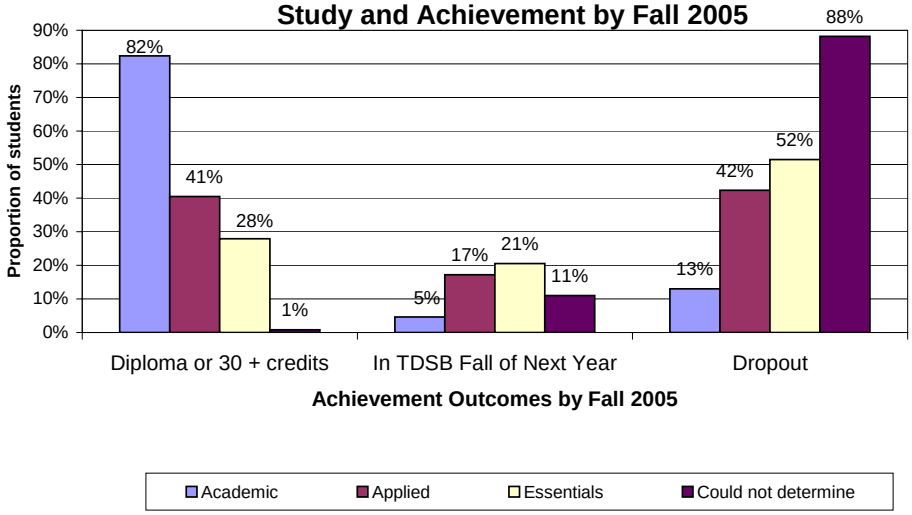
Students in the cohort were classified into program according to the majority of Grade 9/10 courses taken (regardless of subject).[11] Thus, if a majority of a student's Grade 9/10 courses were in the "Academic" program, the student was classified as an "Academic" student.[12] Excluding those who transferred outside the TDSB, 71% of the cohort were classified as taking courses in the Academic program; 23% were classified as taking Applied courses; 2% were classified as taking Essentials (locally-developed)

[8] Deferred students are sometimes deferred because they are recent arrivals from other countries without necessary proficiency in English, and sometimes because they have literacy challenges and need supplemental support. It may be useful to differentiate between these two types of exemptions.
[9] Also, at this time there is preliminary evidence that Absent students are also much more mobile, making them more difficult to monitor and to include in intervention programs.
[10] In theory, OSS was implemented in Fall 1999. However, analysis of students in the 'double cohort'--those who started Grade 9 in Fall 1998 and Fall 1999--found that many students in both were taking courses from the old OS:IS curriculum, and those in the new OSS curriculum, perhaps depending upon the availability of courses offered at the school.
[11] Programs of study for both Grade 9/10 and 11/12 were determined by courses taken to the end of Year 4 (2004).
[12] As the base, this study used the Data Warehouse transcript data from students registered at some point in the 2003-4 school year. If no records for the student could be found, the program of student was determined through the majority of completed credits from the student's Grade 9 year.

courses; while the program of 4% of the students could not be determined.

As seen in Figure 12, over three quarters of students taking Grade 9/10 Academic courses (82%) had graduated or completed over 30 credits by Fall 2004; 5% were still in the TDSB in Year 6 working on their graduation requirements, while 13% had dropped out.

Figure 12: Grade 9 Cohort of Fall 2000: Grade 9/10 Program of Study and Achievement by Fall 2005



By comparison, less than half (41%) of students taking Applied courses had graduated by Fall 2005; slightly under a fifth (17%) were still in the TDSB in Year 6 working on their graduation requirements, while close to half (42%) had dropped out.

Little over a quarter (28%) of students taking Essentials (locally-developed) courses had graduated by Fall 2005, while a fifth (21%) were still in the TDSB in Year 6 working on their graduation requirements. Over half (52%) of these students had dropped out by the end of Year 5.

88% of students with an undetermined program of study had dropped out by Fall 2005. However, this may be an artifact of the study--that is, many of these students dropped out without enrolling in or completing Grade 9/10 courses with defined programs of study.[13]

[13] Among the legacy SIS systems, and prior to the implementation of Trillium as the common SIS system in the TDSB, the rules on retaining dropped or failed Grade 9/10 courses were inconsistent. Thus, many of the students with an undetermined program of study may have dropped or failed all Grade 9/10 courses; having no record of courses, we would be unable to categorise the student's program of study. Regardless of the reason, the vast majority of these students were highly at-risk.

TRANSITION FROM 9/10 TO 11/12 COURSES

Under OSS, students taking Grade 11 and 12 courses have the option of different programs of study or course types: University, College, Mixed (College or University), or Workplace (as well, as with Grade 9/10, Open courses are also offered).

Students in the cohort were classified into program type according to the majority of Grade 11/12 courses taken (regardless of subject). Thus, if a majority of a student's Grade 11/12 courses were in the "University" program, the student was classified as a "University" program student. Excluding those who transferred outside the TDSB, 52% of the cohort were classified as taking University courses; 18% were classified as taking College courses; 12% were taking primarily Mixed courses; 6% were taking Workplace courses; the program of 2% of the students taking Grade 11/12 courses could not be determined. We have no record of Grade 11/12 courses prior to Fall 2004 for 12% of cohort students (either they dropped out, or they had not taken any Grade 11/12 courses in the 2003-4 school year).

As seen in Table 11, there was a very close relationship between the types of courses taken in Grades 9/10 and those taken in Grades 11/12. Thus, approximately three quarters of students taking Academic courses in Grades 9/10 were taking mostly University courses in Grades 11/12; 14% were taking Mixed (College or University), while 10% were taking College courses. Students taking Applied courses in Grades 9/10 were most likely to take College courses (56%), while 17% took Workplace, and 14% took Mixed; only 8% took University courses. Over three-quarters (77%) of students taking Essentials courses in Grades 9/10 were taking mostly Workplace courses in Grades 11/12. It would seem, therefore, that for most students, the type of courses taken in Grades 9/10 tended to define their secondary pathways.

Table 11: Program of Study Grades 9/10 Compared to Grades 11/12

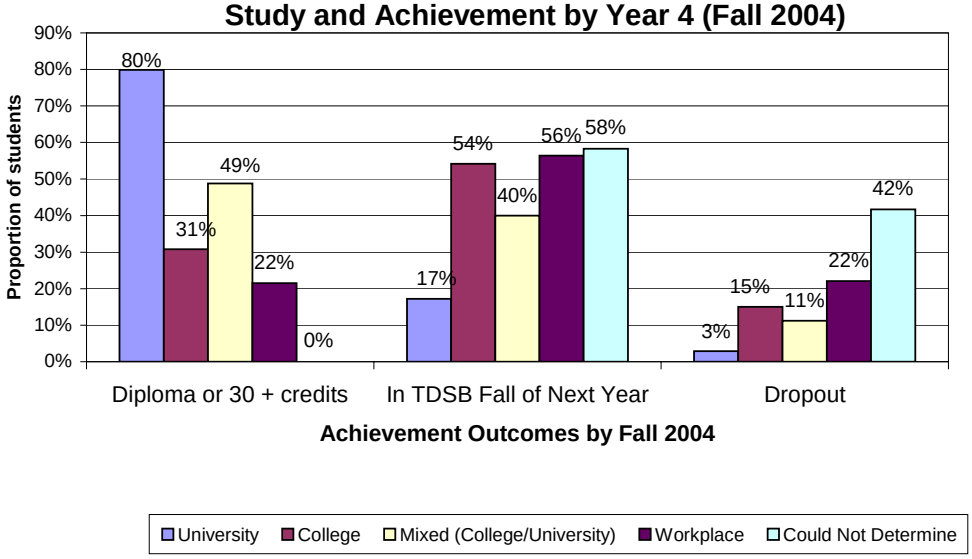
			Program of Study (Grades 11/12)					
			University	College	Mixed	Workplace	Not enough credits to define	Total
Program of Study (Grades 9/10)	Academic	Count	8219	1056	1572	167	37	11051
		Percent	74.4%	9.6%	14.2%	1.5%	.3%	100.0%
	Applied	Count	257	1806	447	549	153	3212
		Percent	8.0%	56.2%	13.9%	17.1%	4.8%	100.0%
	Essentials	Count	12	14	8	212	29	275
		Percent	4.4%	5.1%	2.9%	77.1%	10.5%	100.0%
	Not enough credits to define	Count	1	2	1	4	21	29
		Percent	3.4%	6.9%	3.4%	13.8%	72.4%	100.0%
								.2%
Total		Count	8489	2878	2028	932	240	14567
		Percent	58.3%	19.8%	13.9%	6.4%	1.6%	100.0%
			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Progress by Year 4 and Year 5

Progress by Year 4

Students taking mostly University courses were most likely to have finished their high school requirements by Fall 2004, or Year 4 (80%); this fell to 31% of students taking College and 22% of student taking Workplace courses. About half of those taking Mixed (College/University) courses had graduated by Fall 2004: this is about the halfway point between the University and College rates.

Figure 13: Grade 9 Cohort of Fall 2000: Grade 11/12 Program of Study and Achievement by Year 4 (Fall 2004)

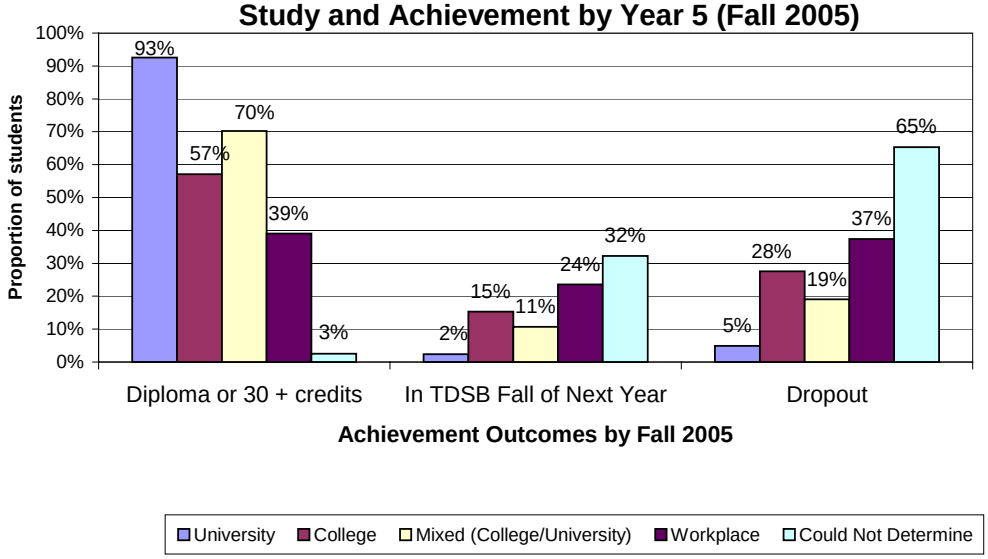


Progress by Year 5

By Year 5 (Fall 2005), the trends seen in Year 4 had become more emphasized. Nearly all (93%) of students taking mostly University level courses had graduated, compared to 57% of students taking College and 39% of students taking Workplace courses. Note that the graduation rate of students taking University had increased only marginally, from 80% to 93%, while the graduation rate of College students had nearly doubled (31% to 57%) as had the graduation rate of Workplace students (22% to 39%). This clearly shows the association of program with years in school. Student taking Academic courses in Grade 9/10, and University courses in Grades 11/12, are much more likely to finish in four years; students in Applied/Essentials courses in Grades 9/10 and College/Workplace courses in Grades 11/12, are more likely to need five years to finish their secondary study (and, hopefully, more will make it through in Years 6 and 7).

70% taking Mixed (College/University) courses had graduated by Year 5: as with Year 4 graduation, this is about the halfway point between the University and College rates, indicating that the Mixed courses truly were a mixture of College and University characteristics.

Figure 14: Grade 9 Cohort of Fall 2000: Grade 11/12 Program of Study and Achievement by Year 5 (Fall 2005)



RETURNING DROPOUTS

If the total number of students in the cohort dropping out over four years is added together, there were 4,994 dropouts out of 16,291, or 31%. However, as noted above, there were actually 3,814 dropouts, or 23%. There are two reasons for the difference:

- 704 students (4%) dropped out multiple times--that is, they dropped out of the TDSB, returned to the TDSB, and then dropped out a second (or, in 54 cases, a third) time.
- 422 students (3%) dropped out but re-entered the system at some point over the five year study: 205 of these dropouts had graduated by Fall 2004; 217 had returned to the TDSB by Fall 2005.

In other words, over a quarter (27%) of TDSB dropouts in this study – 1,126 of 4,216 students who had dropped out at one point or another over the five-year tracking period--returned to the TDSB at least once. This was an increase from 20% of re-entrants in Year 4.[14] The fate of these students is uncertain. Only 205 or 18% of these re-entrants had graduated after five years, and 19% (217 students) were still in secondary studies in Year 6. Most re-entrants, 704 or 62%, had dropped out again. No student who dropped out more than once has yet graduated.

It would appear that the challenges faced by these returning students are daunting. However, we will need to follow these students for the full seven years of the cohort study to get a better picture.

[14] The re-entry rate of 27% in Year 5 was an increase from 653 of 3,251 dropouts calculated by the end of Year 4, or 20% of dropouts. Thus, as the number of dropouts increase, the number of re-entrants also increase, but at a higher rate so that the proportion of re-entrants out of all dropouts jumped from 20% in Year 4 to 27% in Year 5. It will be important to see what the proportion is, at the conclusion of the study in Year 7, and to determine both the success rate of re-entrants, and to try and determine why some succeeded but others did not succeed in their return to the secondary panel.

STUDENTS RETURNING TO THE TDSB IN YEAR 5

Excluding transfers (but including students who had graduated but returned for a fifth year), 38% of students who started Grade 9 at the TDSB in Fall 2000 (Year 1) were still enrolled in TDSB days schools in Fall 2004 (Year 5).[15] Most (90%) of the students who graduated in four years and did not return to the TDSB had taken University courses or Mixed courses in Grades 11/12. Likewise, the majority (80%) of returning graduates had taken University or Mixed courses in Grades 11/12. The course description of students returning to complete their OSSD was more varied: slightly under half took University or Mixed courses in Grades 11/12, the rest were a combination of College, Workplace, or those where the type could not obviously be defined.

STUDENTS RETURNING TO THE TDSB IN YEAR 6

Excluding transfers (but including students who had graduated but returned for a fifth year), 1,465 or 9% of students who started Grade 9 at the TDSB in Fall 2000 (Year 1) were still enrolled in TDSB days schools in Fall 2005 (Year 6). Less than 2% of graduates (196 of 11,164 graduates) were still attending the TDSB in Year 6. Of Year 6 returning students, 14% (206 students) had earlier dropped out and re-entered the TDSB for a second (or third) attempt to complete diploma requirements. The majority of Year 6 students had been in non-Academic program of study in Grades 9/10: that is, 41% took a majority of their Grade 9/10 courses in the Academic program of study, while, 48% had taken a majority of courses in the Applied program, 7% in the Essentials program, and 4% did not take enough 9/10 courses to make a categorization. These Year 6 students were a mostly male group (63%)

What most of these students had in common was dislocation. Only 37% had attended the same school and were living in the same residence between Year 1 and Year 4. 17% were in the same school but had moved residence; 20% were in a different school but the same residence; 22% were in both a different school and a different residence; and 5% had not been present in Year 4 (either transferring to another school outside and TDSB, or dropping out, and then returning to the TDSB for Year 5).

[15] That is, 4,653 students without a diploma returned for Year 5; 1,642 students with a diploma or 30 or more completed credits returned for Year 5, for a total of 6,295 of 16,478, or 38%.

ONTARIO SCHOLARS

Over under a quarter of the cohort (4,564 students or 28%) were granted Ontario Scholarships in 2004 or in 2005 (84% were granted in 2004 and 16% in 2005). This is 41% of all graduates over the five-year study. Females were more likely to be granted Ontario Scholarships--46%, compared to 36% of male graduates.

POSTSECONDARY APPLICATIONS

Current Post-secondary status of the cohort (using information available to August 2005)

We have been provided with post-secondary applications and then registration for 2004, and preliminary application information for 2005. The initial information was provided by OUAC and OCAS, the university and community college applications centres. This has been matched to our 2003-4 and then 2004-5 lists of all students, using a variety of match processes. Once the match was complete, the information was then exported to the Grade 9 cohort dataset, using Trillium ID number.

As of August 2005 this is what we knew about the Grade 9 cohort of students:

- 30% of the cohort (4,932 of 16,921 students) were attending Ontario universities as of Fall 2004;
- 5% of the cohort (762) were attending Ontario community colleges (CAAT's) as of Fall 2004;
- 6% (1,041) had applied to Ontario post-secondary institutions in 2004 but did not apply in 2005 (around half of these students may be attending post-secondary institutions outside Ontario, but we will have no final record of this);
- 10% (1,551) applied to Ontario universities (but not community colleges) in 2005;
- 8% (1,277) applied to Ontario community colleges (but not universities) in 2005;
- 3% (454) applied to both Ontario universities and community colleges in 2005;
- 39% (6,274) had not applied to post-secondary institutions in Ontario in either 2004 or 2005.

In other words, so far, approximately 61% of students in the cohort applied to post-secondary institutions, while 39% had not (the majority being dropouts).

One interesting finding has to do with the first group of unsuccessful post-secondary applicants. Initially, in 2004, there were 1,946 students (12%) who had applied to post-secondary institutions in Ontario but did not attend. However, in 2005, 905 of these students re-applied to post-secondary. As noted, approximately 500 of the original 1,946 non-attendees were probably attending institutions outside of Ontario, which means that the 'true' number of non-attendees is more like 1,446.

Therefore, almost two thirds of students who applied in 2004 but didn't get in, re-applied to Ontario post-secondary institutions in 2005, i.e. 905 of 1,446 (63%).

Flow from Grade 9 to Post-secondary destinations: projections based on current trends

From the above current information we can make a number of estimations and come up with the following projections of how students starting Grade 9 will progress beyond secondary school:

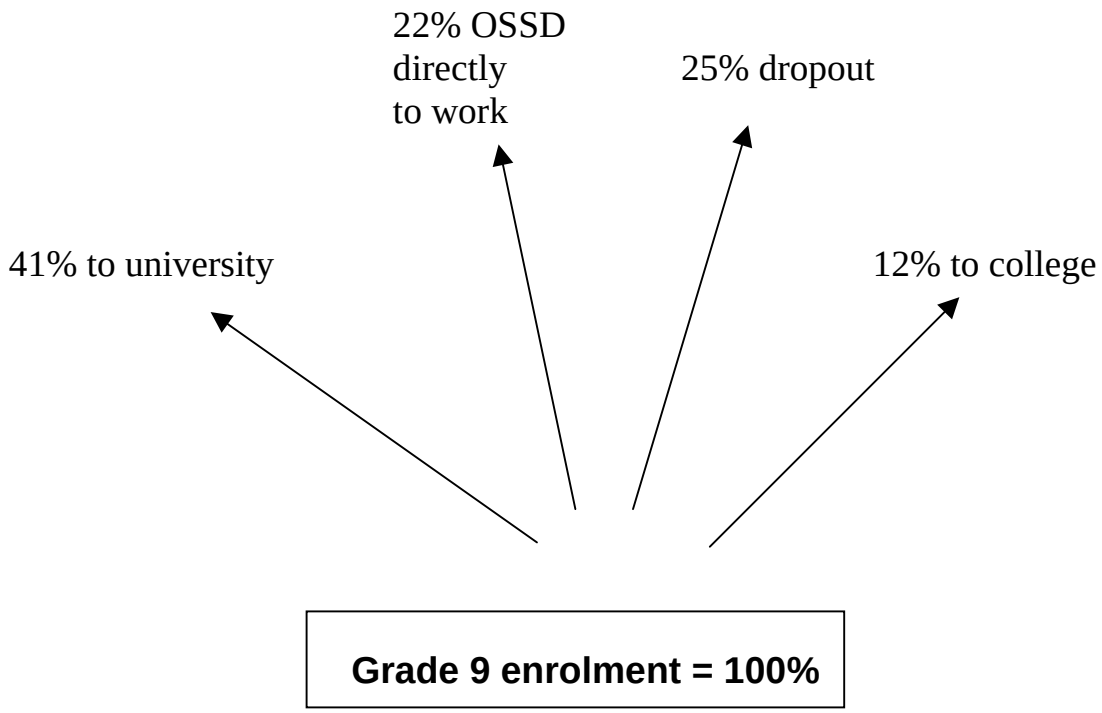
- 35% (5,694 students) attended Ontario post-secondary institutions in Year 4, 2004;
- 14% (2,297, or 70% of the current 3,282 2005 applicants) will have attended Ontario post-secondary institutions in 2005;
- 1% (200 students, or approximately 15% of the current Year 6 students) will attend in 2006;
- 3% (500 students, or about half those who applied to post-secondary in 2004 but did not re-apply in 2005) attended universities outside Ontario.

Thus, 53% of the cohort will enter a post-secondary institution sometime between 4 and 8 years after starting their post-secondary studies (a total of 8,691 students out of 16,291).

Therefore, the trend of the Grade 9 cohort of Fall 2000 would be:

- 53% will attend post-secondary (inside and outside of Ontario)-- approximately 38% will enter Ontario universities, 3% will enter universities outside Ontario, for a total of 41% universities, while 12% will directly enter Ontario community colleges;
- 25% will drop out before the end of high school out and will not have the opportunity to apply to post-secondary directly from high school;
- 22% will graduate but will then directly enter the workforce (see Figure 15).

Figure 15:
Immediate Projections for Fall 2000 Cohort ('Direct' Transition)



Eventual post-secondary destinations of both the 'direct' and 'indirect' transition

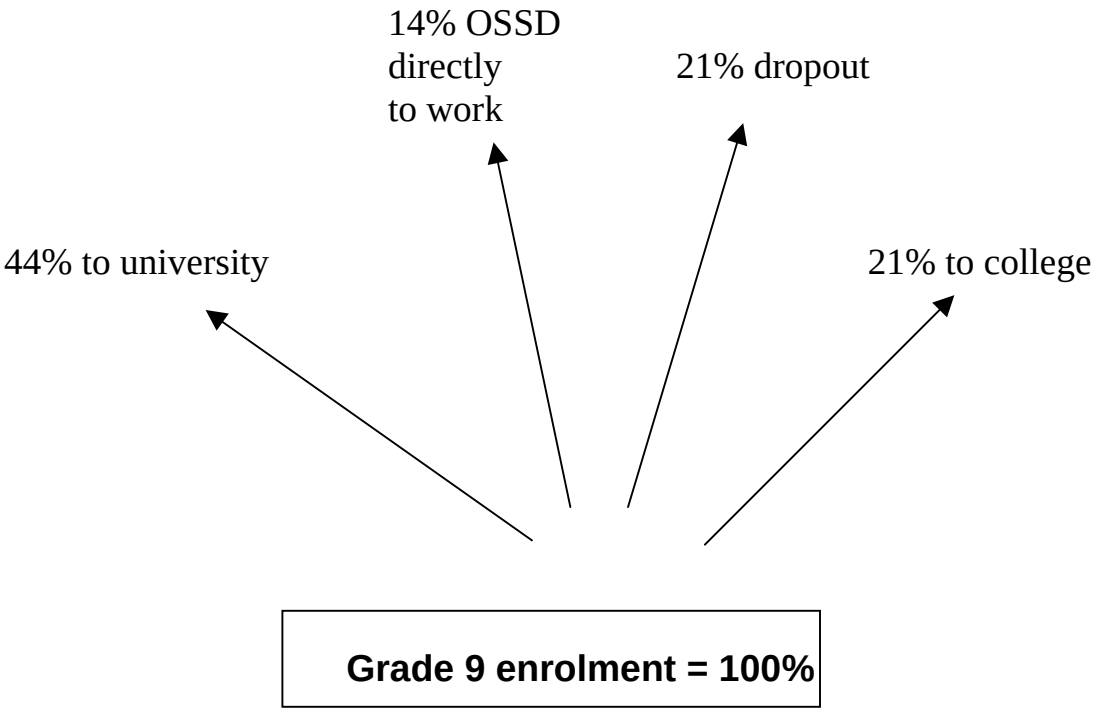
It is highly likely that at least 12% of students will enter post-secondary in what is called the 'indirect transition'--applying after being in the workforce. While most of these would be from the 22% who had entered the workforce directly after graduating, it is also likely that many will come from the ranks of dropouts. That is, students we currently categorize as dropouts will (eventually) complete their high school through continuing education, through the graduate equivalency diploma (GED), or may enter post-secondary without a high school diploma, e.g. as a mature student.

When adjusting for this, and assuming a 9% community college/3% university ratio for the indirect transition, we are left with the following breakdown:

- 65% of the cohort will attend post-secondary at some point--44% will enter universities, while 21% will enter community colleges;
- 21% will drop out and not go onto post-secondary;
- 14% will graduate with a high school diploma but not continue into post-secondary (see Figure 16 below).

One final point should be considered. As seen above, most students who do not drop out are likely to go onto post-secondary study. However, while post-secondary completion information is limited, we do know that the dropout rate is probably higher than the dropout rate of secondary students. Therefore, it has to be emphasised that *for most students in this cohort, secondary studies will be either their highest educational attainment, or the highest completed educational attainment; and that graduation from post-secondary is still a minority outcome for TDSB students.*

Figure 16:
Eventual Projections for Fall 2000 Cohort ('Direct' and 'Indirect' Transitions)



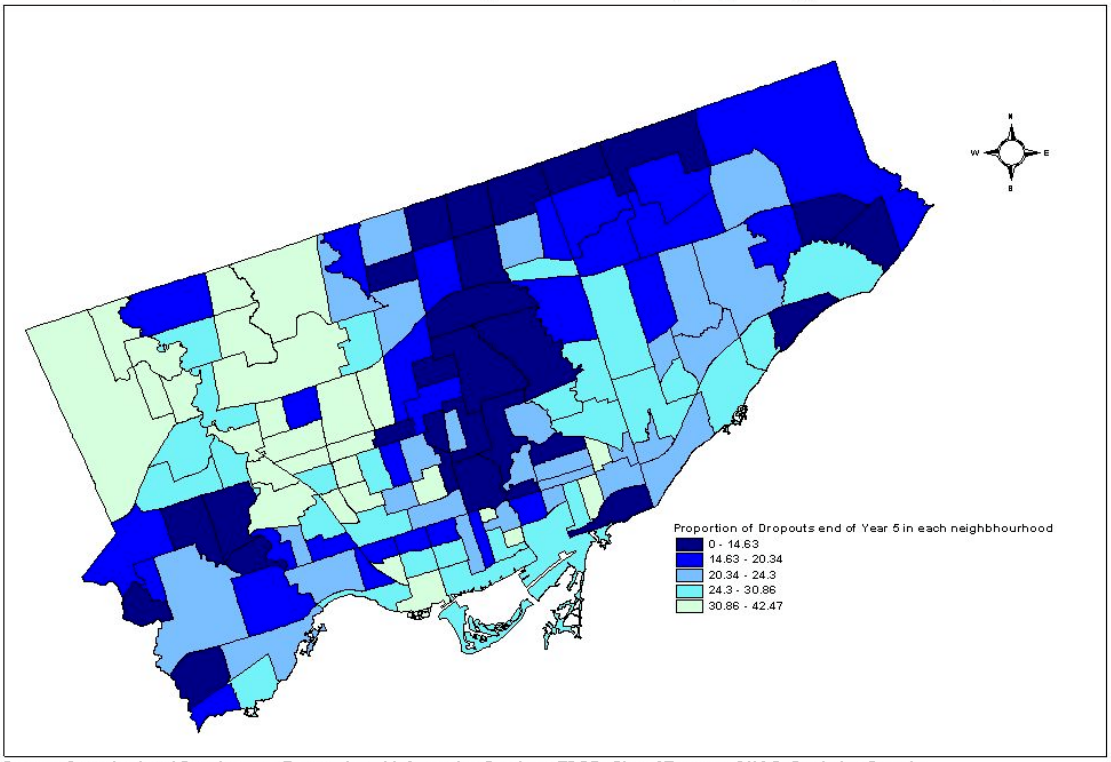
CITY NEIGHBOURHOODS AND COHORT DROPOUT BY END OF YEAR 5

Map 1 illustrates the proportion of students in the cohort who dropped out of school between Years 1 and 5 (Fall 2000-Fall 2005), 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.[16]

The neighbourhood for each cohort was located using the postal code of student residence (as of Fall 2000) and matching it to the local census tract, and then to the neighbourhood based on census tract.

The proportion of dropouts was determined by dividing the number of students in the neighbourhood who had dropped out, by all cohort students (excluding students who transferred to another educational institution outside the TDSB).

Map 1: Proportion of Dropouts by End of Year 5
TDSB Grade 9 Cohort Study 2000-2005 (City Neighbourhoods)



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

[16] For more detail on City of Toronto neighbourhoods, see:http://www.city.toronto.on.ca/demographics/neighbourhood_profiles.htm

The following neighbourhoods had a dropout rate of more than 35%:

- Woodbine-Lumsden
- Regent Park
- Weston-Pellam Park
- Thistletown-Beaumond Heights
- York University Heights
- Beechborough-Greenbrook
- Weston
- Mount Dennis
- Rustic
- North St.Jamestown
- Elms-Old Rexdale
- Rockliffe-Smythe
- Brookhaven-Amesbury
- Dowsnview-Roding-CFB
- Glenfield-Jane Heights
- Corsa Italia-Davenport
- West Humber-Clairville
- Black Creek
- Mount Olive-Silverstone-Jamestown
- Little Portugal

The following neighbourhoods had a dropout rate of below 10%:

- Lawrence Park North
- Mount Pleasant East
- Bayview Woods-Steeles
- Alderwood
- St.Andrew-Windfields

- Willowdale West
- Yonge-Eglinton
- Steeles
- Markland Woods
- Bridle Path-Sunnybrooke-York Mills

The neighbourhood patterns tends to reflect the well-documented 'U' shape of socio-economic challenge. They are also related to other secondary achievement patterns seen in the 2004-5 annual secondary success indicators (EQAO Grade 9 Math, Grade 10 Ontario Secondary School Literacy Test or OSSLT, 17-year-old annual graduates, and 17-21 year old applicants to university). However, the pattern as seen below, is strong and significant but by no means absolute. Characteristics associated with neighbourhoods are an important part of the puzzle but, as seen in this report, secondary achievement is complex and multi-faceted. Neighbourhood characteristics are an important but incomplete predictor of how students will progress in the secondary panel.

Table 12: Correlations of Neighbourhood Level Variables

		Proportion of Dropouts End Year 5	Proportion in Neighbourhood Passing OSSLT	Proportion in Neighbourhood Grade 9 EQAO Math L 34	Proportion in Neighbourhood 17 Year Old Graduates	Proportion in Neighbourhood 17-21 Year Old Uni Apps
Proportion of Dropouts End Year 5	Pearson Correlation	1	-.692**	-.729**	-.685**	-.748**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	140	140	140	140	140
Proportion in Neighbourhood Passing OSSLT	Pearson Correlation	-.692**	1	.667**	.763**	.810**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	140	140	140	140	140
Proportion in Neighbourhood Grade 9 EQAO Math L 34	Pearson Correlation	-.729**	.667**	1	.727**	.794**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	140	140	140	140	140
Proportion in Neighbourhood 17 Year Old Graduates	Pearson Correlation	-.685**	.763**	.727**	1	.867**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	140	140	140	140	140
Proportion in Neighbourhood 17-21 Year Old Uni Apps	Pearson Correlation	-.748**	.810**	.794**	.867**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	140	140	140	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

SUMMARY-DISCUSSION

This first TDSB cohort study examined Years 1 to 5 (Grades 9/12) of students starting their secondary studies in Fall 2000. This was the first full year of the newly implemented OSS curriculum, and the students were the first ones to write the Ontario Secondary School Literacy Test (OSSLT) as an exit requirement for graduation.

There were data challenges, due to the integration of six different student information systems at the start of study in Fall 2000, into the one Trillium system as of Fall 2004. Nonetheless, there are a number of clear findings. Most were evident in last year's evaluation and were included in the interim four-year study (Brown, 2005). These have been updated for this five-year study.

1. A comprehensive examination of all secondary students will take between 5-7 years from the beginning of secondary studies in Grade 9.

In theory, a secondary school diploma should take four years to complete. In fact, while the majority of *university-bound* secondary students appear to have finished after four years, 38% of the Grade 9 cohort returned to the TDSB for Year 5, 29% of who had not completed their diploma requirements. Students who returned for Year 5 were more likely to be outside the university stream, and somewhat behind in their credit achievement.

9% of the cohort returned to the TDSB for Year 6, 8% of whom had not completed their diploma requirements. Most of the students present in Year 6 had experienced some sort of dislocation: they had switch schools, changed home residence, or both.

A previous cohort study of the Toronto legacy system found that many students took 6-7 years to finish their secondary studies, and this seems to be the case with this TDSB cohort. In fact, it would appear that many resilient students who overcome initial disadvantages, do so over a longer period of secondary study (Brown, 2002). Given this, the system should take into account and support those students who are taking longer than the "regular" pace to finish their graduation requirements.

2. The vast majority of at-risk students are clearly identifiable in their first year of secondary study.

At-risk students have a higher representation in some groups of Grade 9 students than others. A number of groups of students were identified as having higher proportions of at-risk students in Year 1 of secondary school (Grade 9), and likewise with a lower proportion of graduates, and/or higher proportion of dropouts, at the end of Year 5:

- male students;
- those older than the age-appropriate year of birth when they started high school;
- those from lower income neighbourhoods, but also other identified geographical Toronto neighbourhoods;
- those born in the English-speaking Caribbean, Central and South America/ Mexico, and Eastern Africa;
- those speaking Portuguese, Spanish, and Somali;
- those who had achieved fewer than seven credits by the end of Year 1;
- those who had not completed a Math credit by the end of Year 1, or had a mark of less than 60%;
- those who had not completed an English credit by the end of Year 1, or had a mark of less than 60% (students taking ESL/D courses in Grade 9 had an average range of achievement by Year 5);
- those taking a majority of Applied and locally-developed courses;
- those with high absenteeism.

Some of these characteristics are associated with achievement characteristics, others with demographic and socio-economic characteristics. One should caution that higher representation does not mean causation. Looking at the reasons behind this higher representation is outside the bounds of this study.

More recent TDSB tracking research has clearly identified secondary at-risk status using Grade 8 Report Card data, and preliminary evidence indicates that at-risk status is identifiable at Grade 7 if not before (Brown, 2004a and 2004b). Another TDSB cohort analysis following Grade 8 students over five years has found that Grade 8

teachers' categorization of student achievement (Grade 8 High, Middle and Low achievement) was found to be an extremely accurate predictor of students' future academic performance (Brown et al., 2006).

The obvious next steps are early identification and intervention. At this time, there are limitations due to the elementary Report Card format as implemented by the Ministry, but hopefully this and other data challenges will be addressed over time.

3. Student mobility is associated with at-risk status, but this is not the full story. Five successive Secondary Success Indicator reports (e.g. Brown 2004b) coupled with this study, have clearly shown that students who move schools after Grade 9 are more at-risk than those who stay in the same school. However, there is an important exception-- students who move from Grade 9 in Junior High Schools to Grade 10 in regular high schools. These students had the same dropout rate, and higher graduation rate, than students in "regular" schools who stayed in the school between Grades 9 and 10. Junior high school achievement shows that it is not the mobility of students 'per se' that is associated with dropout.

Moreover, it was found that except for junior high students, school mobility had a much greater association with negative achievement, than changing home residence. Students who moved their residence after Grade 9, but kept their same school, had somewhat higher dropout rates than those who stayed in the same school and same residence. Those who switch schools and stayed in the same residence had over three times that dropout rate than those who stayed in the same school and home (those who switched both school and residence had almost four times the dropout rate of the most stationary students).

It appears that outside the junior high schools, poorer academic performance in Grade 9 is associated with moving schools after Grade 9, and this combination is in turn associated with higher dropout rates. It needs to be emphasized that we still do not know if moving these at-risk students from one school to another is a net plus or minus for the student. This is something that does need careful attention in future research.

4. The majority of students still in school by the end of Year 5 had passed their literacy requirement.: That is, 81% of students in the Grade 9 cohort had completed their literacy requirement by the end of Year 4, and 84% had completed the requirement by the end of Year 5, by passing the literacy test (OSSLT) in one of four administrations over four years, or completing the Ontario Literacy Course (OLC) over two years. Most students without their literacy requirement had dropped out, and almost all of the remainder was still in the TDSB in Year 6. This left less than half of 1% who had left the TDSB with enough credits to graduate, but did not have their literacy requirement: given the many data issues in this study, this is well within measurement error. Thus, there is no evidence from this cohort that the literacy requirement prevented students from graduating.

Could have the literacy requirement increased dropout? Unfortunately, because this is the first Grade 9 cohort followed within the TDSB, we cannot compare these outcomes to previous cohorts. However, at this point, there appears to be limited dropout rate differences in the TDSB annual outcomes (looking at the outcomes of TDSB 14-19 year old students each year, from 2000-1 to 2004-5. *Therefore, there is no evidence (at this time) that the introduction of the Ontario literacy requirement has had a negative effect on either dropout or graduation.*

5. EQAO's Fully Participating (Method 2) results for OSSLT first-time eligible students excludes the most at-risk students.

Although OSSLT results of first-time eligible students appear to be a good predictor of at-risk status, the results are not necessarily interpreted in the best way-- that is, the public dialogue around OSSLT results centres on "Fully Participating Students" (Method 2), which is a less accurate depiction of at-risk results than "All Students" (Method 1).

The match of the cohort to the first administration of the OSSLT is not complete, but it is high enough that the findings should be carefully considered.

According to student achievement by the end of Year 5, students who passed the OSSLT at the first (Grade 10) administration are the least at-risk, that is, they are most likely to have finished their high school by the end of Year 4 and least likely to have

dropped out. All other first-time eligible student categories have some degree of at-risk status.

If one were to generalize, the students failing Reading only or Writing only should be considered moderately at-risk; students who failed *both* Reading and Writing should be considered at-risk; while students who were eligible to write the exam but did not-- those who were deferred, or those who were absent during the first administration of the test-- should be considered highly at-risk.

This has implications for the way that EQAO results are released. Currently, EQAO emphasizes the release of OSSLT first-time eligible results using Fully Participating Students (Method 2)-- that is, only the results of students who wrote the test, but excluding the deferred and absent students. *Since these absent and deferred students are the most highly at-risk, this means that Fully Participating (Method 2) is not the most complete depiction of a school's at-risk population.* Looking at "All Students", or Method 1 (which is the method used in the school-level release of Grades 3, 6 and 9 EQAO results) is a much better summary statistic, in terms of looking at at-risk students.

Furthermore, starting in 2004-5, results of the literacy test are provided only as "Successful" or "Unsuccessful"--those who fail Reading only or Writing only are categorized along side those who fail both Reading and Writing into "Unsuccessful" . But as we have seen, this misses extremely important information: those who fail both Reading and Writing are *much more at-risk* than those who fail only one of Reading or Writing. *EQAO may wish to reconsider this strategy of putting all the unsuccessful first-time eligible students into one basket*. This too-broad 'Unsuccessful' basket has compromised the power of the OSSLT as a useful predictor of at-risk status.

6. Student Program of Study needs a much more careful examination. The new OSS curriculum was supposed to have removed 'streaming', yet when the students in this (and subsequent) cohorts are categorized according to the majority of completed Grade 9/10 credits, it is found that outcomes of Academic students appear similar to the outcomes of Advanced students under OS:IS, and the outcomes of Applied students under OSS appear similar to the outcomes of General students under OSS (see, e.g., Brown 1997, Turner 1997).

Moreover, three quarters of students taking Academic courses in Grades 9/10 were taking mostly University level courses in Grades 11/12; when the Mixed (College/University) courses are added, the proportion rises to 90%.

Or, another way to look at it is that of students taking a majority of courses at the University level in Grades 11/12, 97% of them had taken a majority of Academic level courses in Grades 9/10.

This should not be thought of in a negative light- in fact, the ideal is that students take courses tailored to their level of study. But it should be realized that the OSS systems appears to have reinvented many of the structures of the old OS:IS streams.

There is a need for much more analysis. For example, many students will take one or two locally-developed courses but a majority of courses in other programs of study, and this report has not looked at the difference. Also, it would be important to examine exactly who changed programs of study, and what were the results of this change. This type of more in-depth analysis was not possible in this cohort study due to limitations of course data (specifically, as students progressed through the system, most of the course information also changed with the conversion from legacy system to Trillium). We will be looking in more depth at the transition between 9/10 and 11/12 programs of study in future cohort analyses, where the course code information is more stable.

7. Dropout is not a permanent status. A fifth of dropouts in this study had returned to the TDSB at least once by the end of Year 4 and over a quarter had returned at least once by the end of Year 5 of the study. Given that we do not know

- who drops out in the TDSB and then returns to other DSB's;
- nor those who return to education through the community college system;
- nor those who will return to the TDSB in Years 5-7;

it is quite possible that up to 40% of dropouts might return once, twice or thrice to Ontario education. These students face daunting challenges, and it will be important to follow them over the full length of the cohort study.

8. Releasing school-level information in cohort reports has multiple levels of complexities. Releasing school-level information is currently extremely important, and is often a priority in the release standardized tests and achievement results. But cohort reports have multiple measures of school information. Excluding students attending junior high school in Grade 9,and those who transferred to a school outside the TDSB, at least a fifth of TDSB cohort students left their first secondary school after Grade 9; many of these students are highly at-risk. If school-level information is to be provided on results over multiple years, is it on the school first attended by the student in Grade 9? If so, complexities like the junior high schools need to be considered. Is it the school last attended? If so, it needs to be recognized that many of the students attending the 'last' school did not begin secondary studies there. This is not to say school-level cohort results should be suppressed-- rather, the complexities need to be recognized and *carefully* dealt with.

9. Projections are more of an art than a science, but looking at post-secondary patterns from current information, it seems likely that over half the students in the Grade 9 cohort will make a direct transition from the secondary panel to post-secondary study. Moreover, *around two thirds of students will attend post-secondary institutions at some time,* when the 'indirect transition' is considered-- students who leave the educational system to the workplace and enter the post-secondary panel. This should fundamentally shift the way we think about the secondary panel. In the nineteenth and early twentieth century, elementary school was the highest level of study for most Ontarians; in the twentieth century, this shifted to the secondary panel; in the twenty-first century, it is shifting to post-secondary.

While we are now seeing the transition to post-secondary as the majority direction of Ontarians, we need to see how this works, at least from the information available. First, even under our most optimistic projection, less than half the cohort students will attend *universities*-- a fifth will attend community colleges and the rest will go the workplace. Secondly, only a third of the students in the study made a direct four-year post-secondary transition, while the rest will enter over many years. Thus, often there will be many years between the last course taken in secondary school, and the first course

taken in post-secondary in the students' selected field. Thirdly, while two thirds of our students may enter post-secondary, current research on post-secondary attrition rate suggests that many will not graduate. For the foreseeable future, the secondary panel will still be the highest *completed* level of education for cohort students. Finally, increased use of internet and job certification programs means that anyone employed in the workplace (whether school leaver, high school graduate or post-secondary graduate) will be continuing their education. The courses will be regulated by workplace or profession rather than the Ministry of Education, but the most of the knowledge skills needed for these courses will have been acquired while in the secondary panel. Rather than minimizing the role of the secondary panel, the current trends have increased its importance as *the* key facilitator to students' futures.

We will be continuing to follow the remaining students in this cohort until Fall 2007. In addition, we are also looking at the four succeeding cohorts of Grade 9 students, as they have progressed through the TDSB system, and beyond. Next year's report will examine results so far from three cohorts (Fall 2000, Fall 2001, and Fall 2002) tracked between four to six years.

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