



Research Report

**2006 STUDENT CENSUS: LINKING
DEMOGRAPHIC DATA WITH STUDENT
ACHIEVEMENT**

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2006 Student Census: Linking Demographic Data with Student Achievement

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EXECUTIVE SUMMARY

Linking Demographic Data with Student Achievement

Using data from the Toronto District School Board's (TDSB) Student Census and Student Information System (SIS), this study examines the academic achievement patterns of the TDSB students in Grades 7 to 10 from various demographic characteristics and family background. While the student academic attainment can be evaluated with different measures, this study concentrates on academic attainment based on school marks in major subjects for the senior elementary grades (Grades 7 and 8), Grade 9 credit accumulation/major subject attainment, and EQAO Grade 10 Ontario Secondary School Literacy Test (OSSLT) results for the secondary panel. Key findings of this study are highlighted as follows:

Student Demographic Characteristics and Student Achievement

Grades 7 and 8

Gender: In all four subjects, the proportion of female students achieving at or above the provincial standard (Levels 3 and 4) were higher than those of male students, but the differences were relatively lower in Mathematics compared to Reading, Writing, and Science.

Student's Region of Birth: Higher proportions of students born in Eastern Asia, South Asia, Southeast Asia, US, Canada, and Europe tend to achieve or exceed the provincial standard in all four subjects. Students born in the English-speaking Caribbean, Central and South America, Eastern Africa, Western Africa, and Western Asia are comparatively less likely to achieve similar grades than students born in any other region.

Student's Racial Background: East Asian students have the highest proportion achieving at or above the provincial standard in Reading and Writing, followed by White, Southeast Asian, South Asian, Mixed, Middle Eastern, Latin, and Black students. The student achievement pattern is somewhat similar for Mathematics and Science with only slight proportionate differences.

Student's Language: Students' academic achievement varies across language groups. For example, Romanian, Korean, Hindi, Chinese, Bengali, and Serbian are among those that have the highest proportion of students achieving at or above the provincial standard in Reading and Writing. The student achievement pattern is somewhat similar for Mathematics and Science with only slight proportionate differences.

Grades 9 and 10

Gender: Male students in Grade 9 and 10 have clearly lower performance in all secondary indicators: Grade 9 Credit Accumulation, Grade 9 Science, Geography, Mathematics, English, and the Grade 10 Literacy Test.

Age of Student: Grade 9 and 10 students who are older than age-appropriate are much more at-risk than age-appropriate students (who are the majority of Grade 9 and 10 students).

Student's Region of Birth: Grade 9 patterns are similar to those seen in earlier research. Students born in the English-speaking Caribbean, Central and South America/Mexico, and Eastern Africa tend to be more highly at-risk than the average student; students born in Eastern Europe, South Asia, and Eastern Asia tend to be less highly at-risk than the average student; students born in Canada tend to have average at-risk levels. OSSLT patterns are not as clear in part due to recent immigration and the proportion of ESL students from some regions.

Student's Racial Background: Grade 9 at-risk students who describe themselves as East Asian, South Asian, Southeast Asian, and White have at-risk rates below the TDSB total, while Middle Eastern and Mixed students have at-risk rates slightly above the board total; those describing themselves as Black or Latin are more likely to be at-risk. A similar distribution is seen in the cohort achievement in the four mandatory subjects. With the Grade 10 OSSLT, the pattern is less noticeable in part due to ESL and recent immigration; still, self-identified Black students have the lowest OSSLT pass rate.

Student's Language: In general, students speaking English (the largest group, accounting for about half the students) have achievement levels somewhat below the average. Students speaking Somali, Spanish, and Dari have much higher at-risk rates and lower achievement. Other language groups (Portuguese, Persian-Farsi, and Greek) have lower achievement in some subjects, yet performance in other indicators is not as problematic. High achievement by student language is somewhat more difficult to put into a consistent pattern. Students speaking Bengali, Chinese, Gujarati, Korean, Russian, Tamil, Hindi, Punjabi, and Vietnamese have higher Grade 9 credit accumulation and usually (but not always) have higher achievement in Science, Geography, and Math. The pattern is not as consistent for English and Grade 10 OSSLT Literacy, in part because of high recent immigration and ESL levels of some language groups.

Student's Sexual Orientation: There are three main categories of responses: heterosexual, Lesbian/Gay/Bisexual/Transgender/Queer (LGBTQ), and Two-spirited, and those 'unsure'. Caution needs to be taken with the 'unsure' category, since it appears that some answered this because they were unclear about what this terminology means, while others answered this because they themselves were questioning their sexual orientation. In the Grade 9 cohort, heterosexual students are somewhat less at-

risk than LGBTQ students and are somewhat more likely to be at the provincial average (70% or more) in the four mandatory Grade 9 subjects. However, there is no real difference in Grade 10 OSSLT results. This is a case where following the Grade 9 students over their secondary careers will provide a more complete picture.

Family Background and Student Achievement

Grades 7 and 8

Parents' Place of Birth: Only slight variation is found in student achievement depending on their parents' place of birth. In Reading and Writing, just under three quarters of students who had Canadian-born parents achieved or exceeded the provincial standard, whereas only two thirds of the students whose parents were born outside Canada achieve or exceed the provincial standard. The profile of student achievement in Mathematics and Science is found to be somewhat similar for students who had Canadian-born parents and students whose parents were born outside Canada.

Parental Presence at Home: Students with both parents present at home are more likely to achieve or exceed the provincial standard when compared to those students who are living with one parent. Most students with two parents achieve or exceed the provincial standard in both Reading and Writing. About half of the students living with single parents (either with father or mother only) achieve or exceed the provincial standard in Reading, Writing, Mathematics, and Science.

Parents' Educational Background: Students with at least one postsecondary-educated parent perform better than students whose parents were educated to the high school level. The majority of students whose parents attended university achieves or exceeds the provincial standard in Reading, Writing, Mathematics, and Science.

Family Socio-Economic Status (SES): Students having parents of high SES are much more likely to achieve and exceed the provincial standard in all four subjects compared to those from low SES background. More than three quarters of the students whose parents are professionals tend to achieve or exceed the provincial standard in Reading, Writing, Mathematics, and Science compared to just over half of the students whose parents work in unskilled positions or those with no income.

Grades 9 and 10

Parents' Place of Birth: Just as there is little difference in student achievement between those born in Canada and those born outside Canada, parent place of birth is likewise not strongly related to student achievement. The next step will be looking in more detail at differences between parent's place of birth.

Parental Presence at Home: Students living with both parents have lower at-risk rates, higher subject achievement, and higher OSSLT pass rates, than those living in other family situations.

Parents' Educational Background: Students with university-educated parents are much more likely than those with college or high school-educated parents to be at lower-risk, be at the provincial standard (70% or higher) in the four Grade 9 subject areas, and to have passed the OSSLT.

Family Socio-Economic Status (SES): There is the strong relationship of family socio-economic status to Grade 9-10 student achievement seen in previous TDSB research. The proportion of Grade 9 cohort students with Professional parents/caregivers is approximately five times that of students with parents from Non-remunerative backgrounds; those from Professional backgrounds are much more likely to be meeting or exceeding the provincial standard in all four subjects, and are more likely to have passed the Grade 10 OSSLT.

Student Program of Study

For these Grade 9 and 10 students as with previous studies, we look at the majority of courses taken by the student in each program of study. The strong relationship seen in earlier studies is likewise seen in TDSB 2006-7 results: students taking a majority of courses in the Academic level are much less likely to be at risk, more likely to be at the provincial standard in the four Grade 9 subject areas, and more likely to pass the OSSLT, than students taking a majority of courses in Applied and Locally-developed/Essentials.

Concluding Remarks

The more recent history of TDSB has found a gradual but important increase in both elementary and secondary school achievement. That being said, this analysis finds that there are clear differences among groups of students. For example, male students, self-described Black students, students born in the English-speaking Caribbean, those speaking Spanish and Somali, students from more challenged socio-economic circumstances, and those living with one parent are more likely to have academic challenge in their first years of high school – findings seen in earlier TDSB research studies, some going back decades. Similar patterns are seen with elementary panel results, in looking at key Grade 7 and 8 Report Card results for 2006-7. These elementary results will serve as a baseline for future studies of senior

elementary students. It is clear, that for a more precise examination of how these students are doing, we will need to follow them over their secondary school careers.

It should be noted that the tables and graphs show relationships and patterns, but they do not provide cause-and-effect relationships; nor is there a judgment of which of these variables are more important than others. The next steps in the research process will involve the examination of these variables using a number of statistical models.

INTRODUCTION

Toronto is one of the world's most diverse cities and the schools within the Toronto region reflect this diversity. The Toronto District School Board's (TDSB) recent *2006 Student Census, Grades 7-12: System Overview* (Yau and O'Reilly, 2007) found that close to half (42%) of the students in Grades 9 to 10 were born outside of Canada. However, little is known about how well the students from various demographic backgrounds do in their studies. This report presents a comprehensive portrait of student achievement among different groups of students in the TDSB. In this report we examine how Grade 7 to 10 students of various demographic characteristics and family background achieve in key subject areas.

"Public education is currently in an era of ...heightened accountability, high-stakes standardized testing, and standards-based reform... Despite countless school reform efforts during the last two decades, there continues to be gaps in academic achievement among different groups of students" (Johnson, 2002, p.4). Given this, studying the achievement patterns of different groups of students can help us better understand and identify research-based strategies to help close the gaps.

This study is part of TDSB's major initiative to conduct research for (TDSB, 2005):

- Developing programs and services for students who need specific interventions and support;
- Assessing the effectiveness of programs established to address specific student needs;
- Allocating resources to support students in need; and
- Identifying systemic barriers to student achievement and implementing changes to remove those barriers. (p.1383)

The report is divided into two sections: the Grade 7 and 8 students; and the Grade 9 and 10 students. While the student academic attainment can be evaluated with different measures, this study concentrates on academic attainment based on school marks in major subjects for the elementary grades; and Grade 9 credit accumulation/major subject attainment, and EQAO Grade 10 Ontario Secondary School Literacy Test (OSSLT) results for the secondary panel.

About this Study

This study uses two major sources of information; the TDSB's 2006 Student Census data and the TDSB's Student Information System. The 2006 Student Census was conducted in November 2006. The Census database consists of 34,219 students for the senior elementary Grades (Grades 7 and 8), and 71,222 students for the secondary panel (Grades 9 to 12), representing 92% and 81% of the students within the

system¹ respectively. The Census data informs us on the students' demographic and family background characteristics such as Gender, Racial Background, Parents' Place of Birth, Parental Presence at Home, Parent's Educational Background, and Family Socio-Economic Status (SES). The TDSB Student Information System provides the students' demographic characteristics such as Region of Birth, Language, and Age and student academic characteristics such as Program of Study.

There are several ways to measure achievement gaps. This study uses descriptive statistics to measure achievement gaps among different groups of students. That is, we are basically describing what the data indicates in terms of academic achievement patterns of the various student groups. This approach does not provide reasons for gaps in achievement among different groups of students.

However, further studies based on the Census dataset and other data sources will allow an in-depth examination of how schools and classroom factors, as well as individual and family conditions, affect changes in achievement. Factors that affect student academic achievement are multifaceted and diverse and these detailed relationships will be the focus of future research for the TDSB Research Department with the use of the Census data.

Senior Elementary School Achievement Outcome Measures

For the students in the elementary senior grades (Grades 7 and 8), results are reported as percentages of students attaining the Provincial Report Card achievement levels in Reading, Writing, Mathematics, and Science. "The Provincial Report Card for Grades 1 to 8 ensures that all students attending publicly funded elementary schools in Ontario receive a standard report card based on the Ontario curriculum expectations" (Ontario Ministry of Education and Training, 1998, p.2).

Percentage marks used in Grades 7 and 8 are converted into achievement levels using the Provincial Guide for Grading. Three achievement levels have been developed to provide a context for interpreting student achievement in the elementary report card (Ontario Ministry of Education and Training, 1998):

- *Achievement meets and exceeds the provincial standard (**Level 3 and 4**)*
- *Achievement approaches the provincial standard (**Level 2**)*
- *Achievement falls much below the provincial standard and extensive remediation is required. (**Level 1 and R**)*

¹ See Yau & O'Reilly (2007) for more details on the TDSB's 2006 Student Census.
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Secondary School Achievement Outcome Measures

There are six Grade 9 and 10 achievement outcomes that will be examined: Grade 9 cohort credit accumulation; Grade 9 cohort achievement in the compulsory credits of English-ESL/ELD, Science, Mathematics, and Social Science (Geography); and achievement of second year (Grade 10) students, known as 'first time eligible', in their first attempt at EQAO's Grade 10 Ontario Secondary School Literacy Test (OSSLT).

- **Grade 9 Cohort** consists of 13-15 year old students who attended the TDSB over the full 2006-7 school year (Fall 2006 through June 2007) and who, according to student records, were new to secondary school studies.
- **Grade 9 Credit Accumulation** examines the proportion of Grade 9 students who, by the end of Summer School (August 2007), had completed 6 or fewer credits, putting them potentially at risk of not graduating on time and possibly dropping out.
- Grade 9 Cohort **Mathematics, Science, and Social Science (Geography) achievement**, examines: 1) Grade cohort students who had not completed a credit in the subject by August 2007, or had an average of 50-59%; 2) those who had an average of 60-69%; and 3) those who were at the provincial standard, that is, an average of 70% or higher (Levels 3 and 4).
- Grade 9 Cohort **English-ESL/ELD achievement**, examines: 1) cohort students who had completed an ESL/ELD credit but not an English credit by August 2007; 2) Grade cohort students who had not completed a credit in either English or ESL/ELD by August 2007, or had an average of 50-59%; 3) those who had an average of 60-69%; and 4) those who were at the provincial standard, that is, an average of 70% or higher (Levels 3 and 4).
- Results of first-time eligible (Grade 10) students writing the **OSSLT** examines those who had successfully completed the test the first time, versus those who had not. This is very similar to 'Method 1' except that a small number of 'exempt' students are included.

Validity of the Outcome Measures

The above measures have all been validated as strong predictors of student performance. In the first TDSB Grade 9 cohort study, less than a third of students with 6 credits had completed high school by the end of five years, compared to 86% of students who had completed the expected 8 credits – a general pattern unchanged since the 1987 Grade 9 cohort (Brown, 1993; Brown, 2006b). There is likewise a clear relationship between Grade 8 and 9 subject performance and future achievement. For example, 59% of students in the Fall 2000 cohort who did not complete a Mathematics course in Grade 9 had dropped out

five years later, and 27% of those who had an average of 50-59% had also dropped out; this compares to 18% of those who had an average of 60-69%, 13% of those with an average of 70-79%, and 5% of those with an average of 80% or more.

The relationship between Grade 8 “at-risk” status (using performance in Mathematics, English, and Science) and Grade 9 and Grade 10 “at-risk” status (using total credit accumulation) is also clearly documented. For example, of students identified as “low risk” in Grade 8 (Levels 2 or above in English, Mathematics, and Science), only 10% were identified as ‘at-risk’ through credit accumulation by the end of Grade 10; while the majority of highly at-risk students from Grade 8 were also at-risk by the end of Grade 10 (Brown 2006b).

Likewise, OSSLT achievement in Grade 10 is closely related to future achievement. The biggest difference is between those who are successful the first time, and those who are not (‘Other’). Also, those who fail the test are less at-risk compared to those who are deferred or absent. The comparatively small number of ‘exempt’ students are included since high school completion is not considered possible for those students and they are therefore *de facto* ‘at risk’ of not graduating.

Student Census Matching Rates

Students’ achievement data collected in the TDSB’s Student Information System were linked with the Census’ demographic data and their group patterns are presented in the first section of this report. For the senior elementary panel 97% (33,146 of 34,219) of the students who participated in the Student Census were matched with the TDSB’s Student Information System.

In the secondary panel, there were 17,864 students in the Grade 9 cohort; of them 89% (15,941) were matched to the Census. Out of 19,436 students who wrote the Grade 10 literacy test, 15,941 (82%) were matched to the Census.

The difference is in part because some students completed a survey but a link was not successfully established with the TDSB Student Information System (2%); but the majority of non-matched records is due to students who did not complete the Census. These students are systemically different from those who completed the Census. They are more likely to be at-risk, less likely to have been successful in courses and in completing the OSSLT, and are also more likely to be absent from class (a contributing reason for the non-match, since those students were not present in school they did not have the opportunity to complete the Census)². Thus, it should be noted that some of the most at-risk students are not in fact represented in the Census³.

² Results are shown for as many students as possible. For most demographic variables where information was gathered from the Student Information System, this is for all intents the entire student population; likewise achievement data is available for the R04(Mgmt\StudentCensus\2006StudentCensusLinkingDemographicDataWithStudentAchievement)esrb.3457

Cautions in Interpretation

It should be noted that the tables and graphs show relationships and patterns, but they do not provide cause-and-effect relationships; nor is there a judgment of which of these variables are more important than others. The next steps in the research process will involve the examination of these variables using a number of statistical models

entire Grade 9 cohort and all but a few Grade 10 (first-time eligible) students in the OSSLT Grade 10 literacy test. For the Student Census, however, we looked only at those who responded to the Census.

³ The Grade 9 cohort at-risk rate (proportion of students with fewer than 7 credits by the end of Grade 9) was **11%** for Grade 9 cohort students who responded to the Census (N = 15,854); it was **38%** for the cohort students who did not respond to the Census (N = 2,010) or between 3 to 4 times the at-risk rate Census participants. Likewise, of first-time eligible (Grade 10) students, the at-risk by credit accumulation (14 or fewer credits) of those who participated in the Census (N = 15,941) was **22%**; the rate of those who did not participate in the Census (N = 3,495) was **49%**.

SECTION I: RESULTS AND DISCUSSION: GRADES 7 and 8

Student Demographic Characteristics and Student Achievement

This section presents an overview of students' academic achievement in relation to their demographic characteristics. We will examine how Grade 7 and 8 students from various backgrounds performed in Reading, Writing, Mathematics, and Science based on their Term 3 Report Card results obtained during the same school year when the Census was collected (2006-07).

Gender

Over the years numerous studies have examined the academic achievement of girls and boys in Reading, Writing, Mathematics, and Science. International studies such as Programme for International Student Assessment (PISA) and Progress in International Reading Literacy Study (PIRLS) suggest that a 'gender gap' in attainment is ... an issue in other countries" (OECD, 2004, as cited in Machin and McNally, 2005, p1).

Similar findings have emerged within the TDSB experience. The TDSB elementary report card data shows more female than male students perform at or above the provincial standard (i.e., Levels 3 and 4) in all four subjects. The gender gap is relatively lower in Mathematics (6%) compared to Reading (16%), Writing (18%), and Science (12%) (see Figures 1-4).

Figure 1: Student Achievement in Reading by Gender

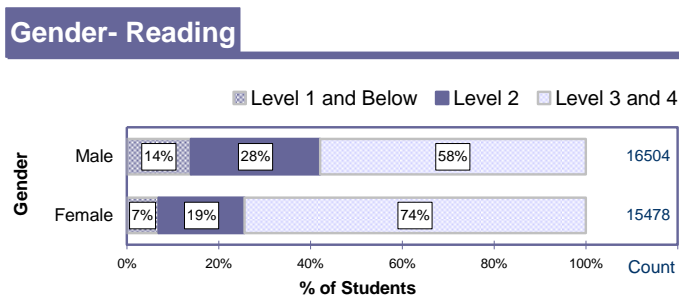


Figure 2: Student Achievement in Writing by Gender

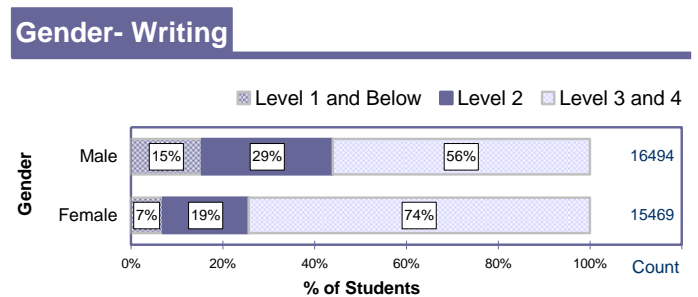


Figure 3: Student Achievement in Mathematics by Gender

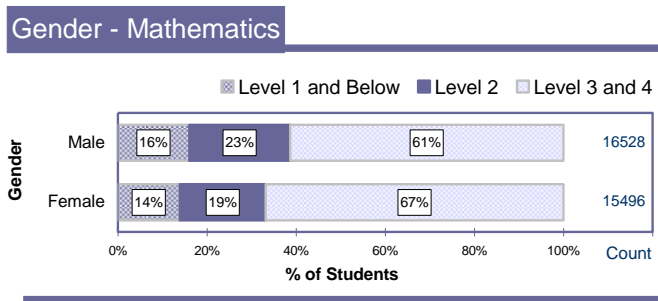
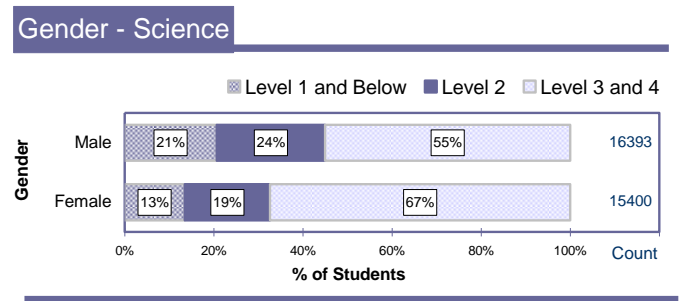


Figure 4: Student Achievement in Science by Gender



Student’s Region of Birth

There are over 200 countries of birth for students in the TDSB; it is therefore, difficult to provide analysis on this variable. Instead, data from countries of birth have been combined into 12 ‘Regions of Birth’. Figures 5 to 8 show the academic achievement patterns of the TDSB students in the senior elementary grades (Grades 7 and 8) from these regions⁴ in Reading, Writing, Mathematics, and Science.

Figure 5: Student Achievement in Reading by Region of Birth

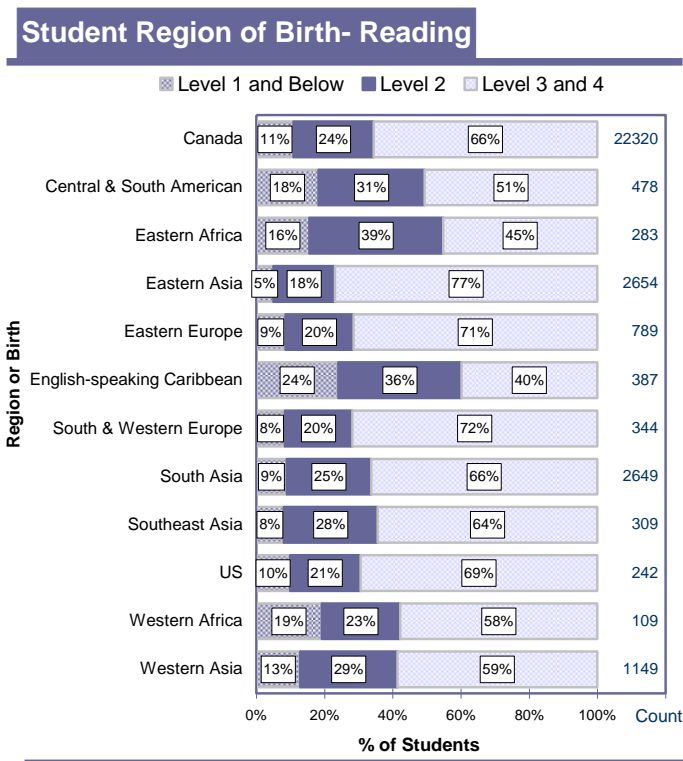
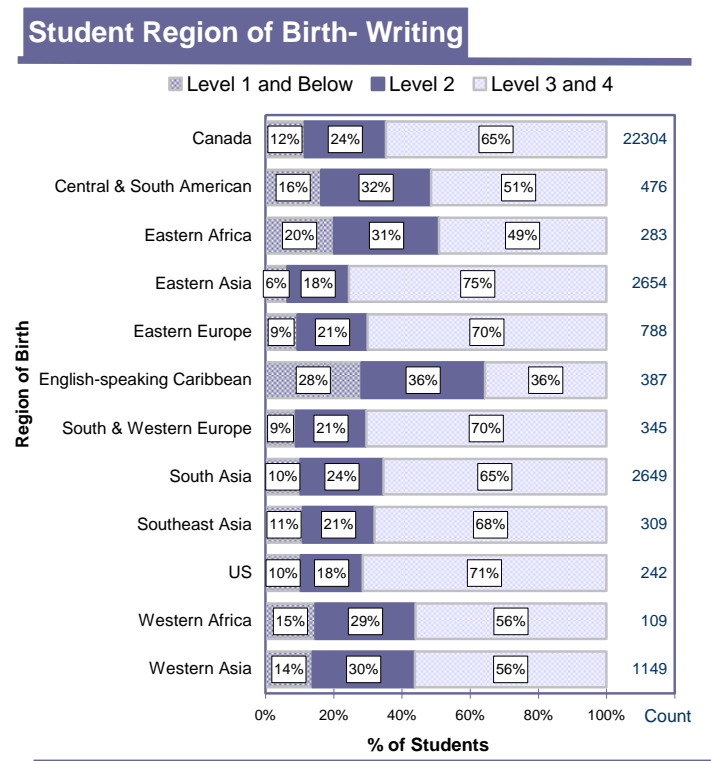


Figure 6: Student Achievement in Writing by Region of Birth



⁴ Only the regions with 100 or more students are shown.

Examining the students' Region of Birth and their achievement in Reading, Writing, Mathematics, and Science, we find that higher proportions of students born in Eastern Asia, South Asia, Southeast Asia, US, Canada and Europe tend to achieve at or above provincial standard. We also find that students born in the English-speaking Caribbean, Central and South America, Eastern Africa, Western Africa, and Western Asia are comparatively less likely to achieve similar grades than students born in any other region (see Figures 5 to 8). For example, 77% of the students born in Eastern Asia, 66% in South Asia, 64% in Southeast Asia, 66% in Canada, 69% in US, 71% in Eastern Europe, and 72% in South and Western Europe are at the provincial standards in Reading; compared to 40% of the students born in the English-speaking Caribbean, 51% in Central and South America, 45% in Eastern Africa, 58% in Western Africa, and 59% in Western Asia (see Figure 5).

Figure 7: Student Achievement in Mathematics by Region of Birth

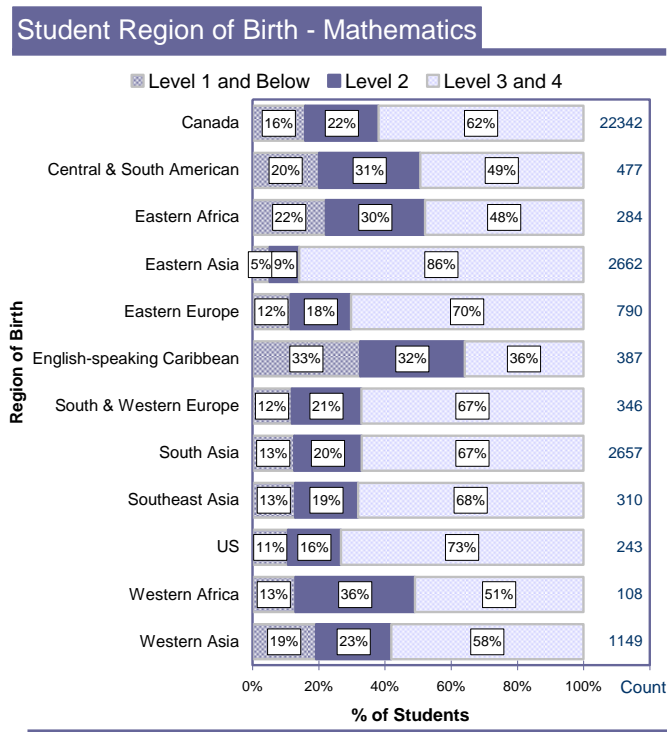
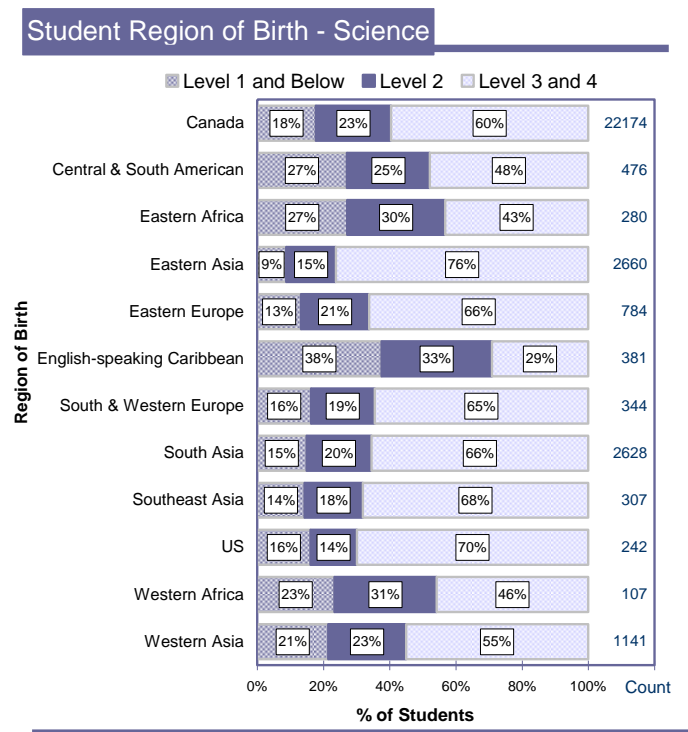


Figure 8: Student Achievement in Science by Region of Birth



Student's Racial Background

Figures 9 to 12 show the achievement patterns for each of the racial groups⁵ of the TDSB students in the senior elementary grades (Grades 7 and 8). Overall, more students who identify themselves as Asian (includes Asians from all regions), or White achieve at or above provincial standard (Levels 3 and 4) and are the least at-risk (Level 1 and Below) than any other racial group in all four subjects.

Figure 9: Student Achievement in Reading by Racial Background

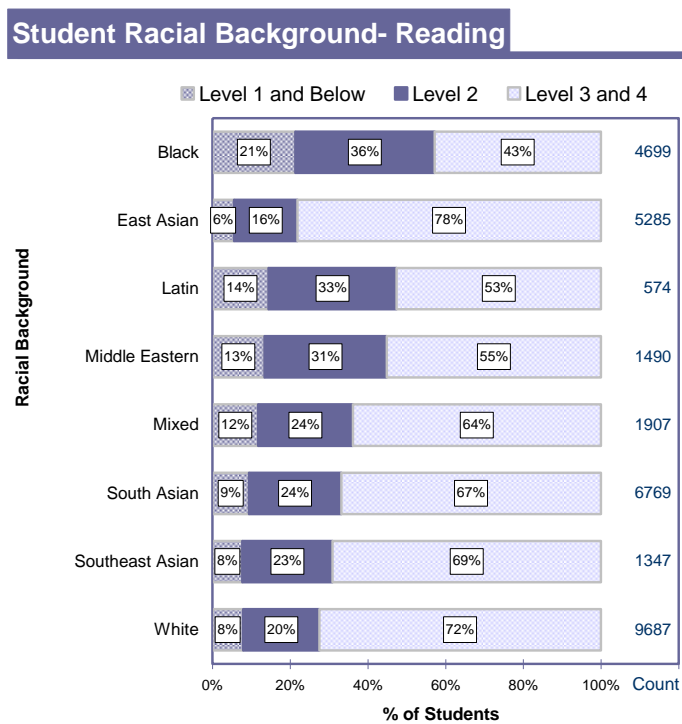
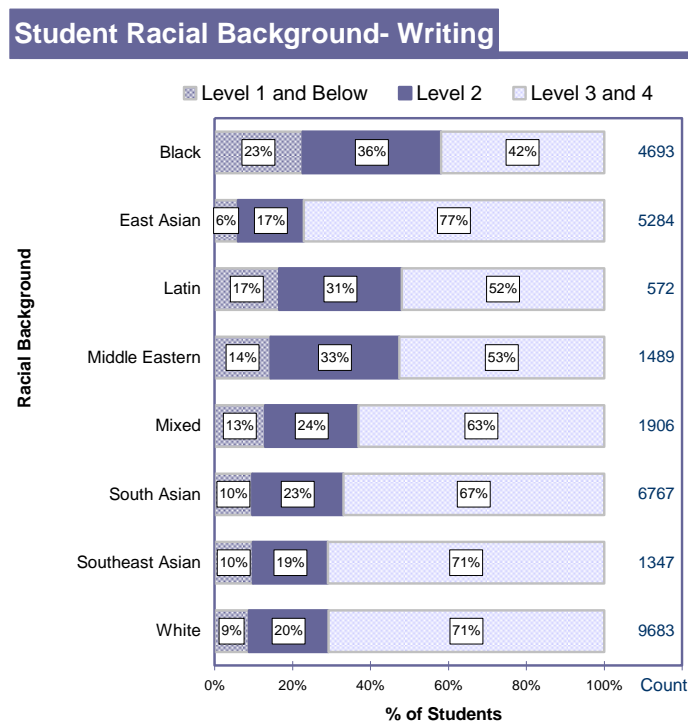


Figure 10: Student Achievement in Writing by Racial Background



The largest proportion of students performing at or above the provincial standard (Levels 3 and 4) in Reading and Writing are East Asians, followed by White, Southeast Asian, South Asian, Mixed, Middle Eastern, Latin, and Black students. The student achievement pattern is somewhat similar for Mathematics and Science with only a slight proportionate difference. For example, 84% of East Asian, 73% of Southeast Asian, 68% of South Asian, and 66% of White students are at the provincial standard in Mathematics; compared to 57% of Mixed, 52% of Middle Eastern, 48% of Latin, and 37% of Black students (see Figure 11). These results are corroborating research studies recording higher levels of educational achievement of the Asian students in the US (Asakawa & Csikszentmihalyi, 2000; Caplan, Choy, & Whitmore, 1992; Chen & Stevenson, 1995; Mizokakawa & Ryckman, 1990; Sanchirico, 1991; Stevenson et al., 1985 as cited in Chow, 2004).

⁵ Data are not reported for Aboriginal Students, because reporting standards were not met. Only racial groups with 100 or more students are shown.

Figure 11: Student Achievement in Mathematics by Racial Background

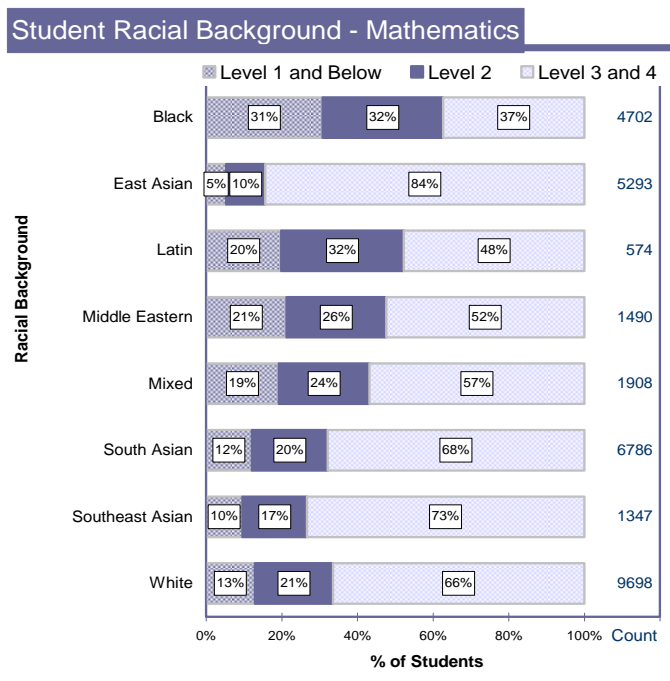
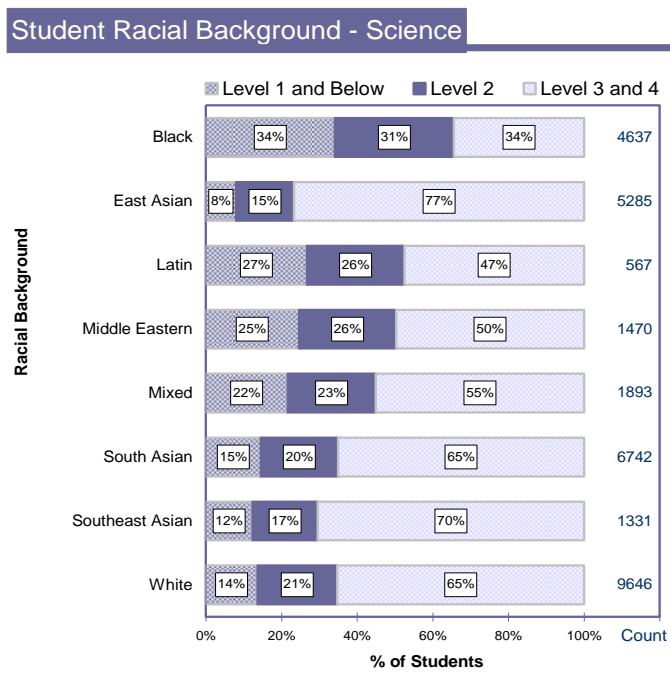
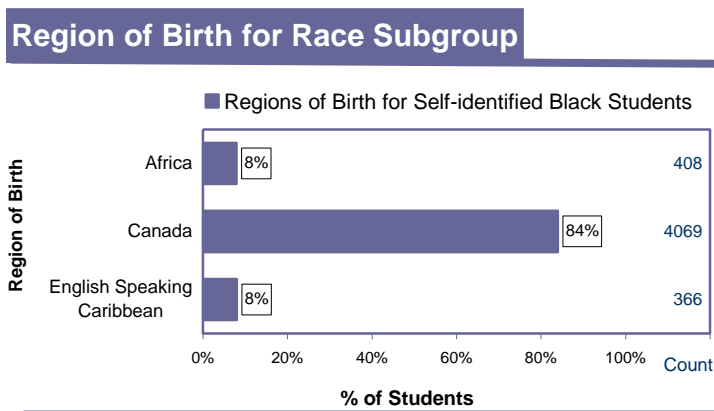


Figure 12: Student Achievement in Science by Racial Background



It should, however, be noted that variation in academic achievement does exist within each racial group in terms of the students' Region of Birth. One of the current initiatives of the TDSB to close the educational achievement gap for all students is to improve the success of Black students⁶. Therefore, we look in more detail at the achievement of self-identified Black students, according to three Regions of Birth: those born in Canada; those born in the English-speaking Caribbean; and those born in Africa (the 5 regions of Africa are combined into one).

Figure 13: Regions of Birth for Race Subgroup



Out of 4,843 self-identified Black students, the vast majority (4,069) were born in Canada. 408 were born in one of the five regions of Africa. 366 were born in the English-speaking Caribbean (see Figure 13).

⁶ On January 29, 2008 the TDSB Board of Trustees voted in support of innovative strategies for improving the success of Black students. See: http://www.tdsb.on.ca/about_us/media_room/Room.asp?show=allNews&view=detailed&self=9563

Tables 1 and 2 show the achievement patterns of the self-identified Black students from the different Regions of Birth. There are higher percentages of African-born Black students than that of Canadian-born Black and Caribbean-born Black students achieving at or above the provincial standard in all four subjects. In general, self-identified Black students born in the English-speaking Caribbean have the highest at-risk (Level 1 and Below) rates in all four subjects.

Table 1: Student Achievement of Self-identified Black Students in Reading and Writing by Region of Birth

Region of Birth	Reading				Writing			
	Level 1 and below	Level 2	Level 3 and 4	Total	L 1 and below	Level 2	Level 3 and 4	Total
	%	%	%	N	%	%	%	N
Africa	17%	37%	46%	387	20%	32%	48%	386
Canada	22%	36%	43%	3865	22%	36%	42%	3860
English-speaking Caribbean	25%	37%	38%	346	30%	37%	34%	346

Table 2: Student Achievement of Self-identified Black Students in Mathematics and Science by Region of Birth

Region of Birth	Mathematics				Science			
	Level 1 and below	Level 2	Level 3 and 4	Total	L 1 and below	Level 2	Level 3 and 4	Total
	%	%	%	N	%	%	%	N
Africa	21%	33%	46%	387	29%	30%	41%	380
Canada	32%	31%	37%	3869	34%	32%	34%	3814
English-speaking Caribbean	34%	34%	33%	346	40%	34%	26%	341

Student's Language

There are 25 “key” languages⁷ spoken by at least a hundred or more of the Grade 7 and 8 students who participated in the TDSB 2006 Student Census. These languages account for 92% of the Grade 7 and 8 students who participated in the census (31,548 of 34,219). Half (50%) of the Grade 7 and 8 students speak English only (see Table 3).

⁷ Student's language groups and figures are based on data extracted from the TDSB's Student Information System (SIS) and include only the language groups with 100 or more students.

Table 3: Distribution of Key Languages Spoken by Grade 7 and 8 Students in the TDSB

Language	Count (N)	Percent (%)	Language (Continued)	Count (N)	Percent (%)
Albanian	197	0.6%	Portuguese	159	0.5%
Arabic	384	1.2%	Punjabi	600	1.9%
Bengali	549	1.7%	Romanian	121	0.4%
Chinese	4572	14.5%	Russian	495	1.6%
Dari	192	0.6%	Serbian	194	0.6%
Dari/Pashto	120	0.4%	Somali	669	2.1%
English	15702	49.8%	Spanish	603	1.9%
French	182	0.6%	Tagalog (Pilipino)	316	1.0%
Greek	258	0.8%	Tamil	1984	6.3%
Gujarati	622	2.0%	Turkish	158	0.5%
Hindi	239	0.8%	Urdu	1227	3.9%
Korean	646	2.0%	Vietnamese	608	1.9%
Persian (Farsi)	751	2.4%	Total	31,548	100%

Tables 4 and 5 show the achievement patterns of the TDSB students in the senior elementary grades (Grades 7 and 8) by different language groups. Students academic achievement varies across language groups. For example, Romanian, Korean, Hindi, Chinese, Bengali and Serbian are among those that have the highest percentages of students achieving at or above the provincial standard in Reading and Writing. The student achievement pattern is somewhat similar for Mathematics and Science with only slight proportionate differences. Among the English speaking students, 64% of them are achieving at provincial standards in Reading; 62% of them in Writing; 57% in Mathematics, and 56% in Science.

The language groups with the highest percentages of students achieving at Level 1 and Below are Arabic, Spanish, Dari, Turkish, Somalia, and Dari/Pashto in Reading and Writing; Persian (Farsi), Portuguese, Dari/Pashto, Dari, Somalia, and Turkish in Mathematics and; Persian (Farsi), Spanish, Turkish, Somalia, Dari/Pashto, and Dari in Science. Among the English speaking students, 12% of them are achieving at Level 1 and Below in Reading; 13% of them in Writing; 19% in Mathematics, and 20% in Science (see Tables 4 and 5).

Table 4: Student Achievement in Reading and Writing by Key Languages

Language	Reading				Writing			
	Level 1 & below	Level 2	Level 3 & 4	Total	Level 1 & below	Level 2	Level 3 & 4	Total
	%	%	%	N	%	%	%	N
Albanian	11%	21%	68%	190	13%	23%	64%	191
Arabic	14%	31%	55%	374	16%	30%	54%	373
Bengali	5%	19%	75%	525	7%	16%	77%	525
Chinese	6%	17%	77%	4455	7%	18%	75%	4454
Dari	15%	35%	49%	186	15%	41%	44%	186
Dari/Pashto	21%	25%	54%	114	19%	33%	47%	114
English	12%	24%	64%	14996	13%	25%	62%	14984
French	9%	24%	67%	169	11%	22%	67%	168
Greek	11%	26%	63%	252	12%	24%	65%	252

Table 4 (Continued): Student Achievement in Reading and Writing by Key Languages

Language	Reading				Writing			
	Level 1 & below	Level 2	Level 3 & 4	Total	Level 1 & below	Level 2	Level 3 & 4	Total
	%	%	%	N	%	%	%	N
Gujarati	8%	26%	66%	597	9%	27%	64%	597
Hindi	5%	17%	78%	229	6%	16%	79%	229
Korean	4%	17%	79%	603	4%	15%	81%	603
Persian (Farsi)	11%	31%	57%	714	13%	31%	55%	714
Portuguese	7%	31%	62%	146	12%	33%	55%	146
Punjabi	9%	26%	65%	577	9%	27%	64%	577
Romanian	5%	13%	82%	115	6%	13%	81%	115
Russian	8%	22%	70%	460	8%	23%	69%	460
Serbian	5%	22%	74%	185	7%	16%	77%	185
Somali	18%	40%	41%	647	20%	39%	41%	645
Spanish	14%	33%	53%	561	16%	34%	50%	560
Tagalog (Pilipino)	11%	25%	64%	303	14%	19%	67%	303
Tamil	10%	23%	68%	1943	9%	23%	68%	1943
Turkish	17%	38%	45%	152	21%	38%	41%	152
Urdu	11%	26%	63%	1181	12%	24%	64%	1181
Vietnamese	7%	21%	72%	595	8%	19%	73%	594

Table 5: Student Achievement in Mathematics and Science by Key Languages

Language	Mathematics				Science			
	Level 1 & below	Level 2	Level 3 & 4	Total	Level 1 & below	Level 2	Level 3 & 4	Total
	%	%	%	N	%	%	%	N
Albanian	14%	17%	69%	192	16%	19%	65%	190
Arabic	19%	24%	57%	369	20%	24%	56%	368
Bengali	8%	16%	76%	525	8%	15%	77%	514
Chinese	5%	11%	84%	4462	8%	16%	76%	4453
Dari	24%	28%	47%	186	35%	27%	38%	186
Dari/Pashto	23%	34%	43%	113	34%	25%	41%	112
English	19%	24%	57%	15015	20%	24%	56%	14909
French	16%	23%	61%	170	17%	23%	60%	171
Greek	18%	25%	57%	252	21%	27%	52%	252
Gujarati	11%	19%	70%	599	12%	21%	67%	597
Hindi	9%	16%	75%	231	10%	16%	74%	231
Korean	5%	11%	84%	604	8%	16%	77%	604
Persian (Farsi)	22%	24%	55%	718	23%	25%	52%	708
Portuguese	22%	26%	52%	146	20%	22%	58%	143
Punjabi	12%	21%	67%	580	17%	20%	63%	578
Romanian	9%	10%	81%	115	9%	12%	79%	115
Russian	12%	15%	72%	461	14%	22%	64%	460
Serbian	8%	17%	75%	185	8%	19%	74%	185
Somali	24%	35%	41%	646	29%	33%	38%	628
Spanish	19%	33%	48%	561	26%	26%	47%	552
Tagalog (Pilipino)	14%	21%	65%	304	15%	23%	62%	302
Tamil	10%	17%	74%	1944	12%	20%	68%	1928
Turkish	27%	28%	45%	151	27%	27%	46%	147

Table 5 (Continued): Student Achievement in Mathematics and Science by Key Languages

Language	Mathematics				Science			
	Level 1 & below	Level 2	Level 3 & 4	Total	Level 1 & below	Level 2	Level 3 & 4	Total
	%	%	%	N	%	%	%	N
Urdu	15%	23%	61%	1182	17%	20%	63%	1172
Vietnamese	7%	14%	79%	594	11%	15%	74%	587

Family Background and Student Achievement

In this section, we will examine how Grade 7 and 8 students from various family backgrounds such as Parents' Place of Birth, Parental Presence at Home, Parent's Education and Family Socio-Economic Status (SES), perform in Reading, Writing, Mathematics, and Science.

Parents' Place of Birth

Only a slight variation is found in student achievement based on their parents' place of birth. In Reading, just less than three quarters (71%) of students who had Canadian-born parents achieve or exceed the provincial standard, whereas 64% of the students whose parents were born outside Canada achieve or exceed the provincial standard. For Writing, the difference in achievement for those students whose parents were born in Canada and those who had parents born outside Canada is even more modest (5%). The profile of student achievement in Mathematics and Science is found to be somewhat similar for students who had Canadian-born parents and students whose parents were born outside Canada (see Figures 14-17). It should be noted that a simple breakdown of parents' place of birth, like a simple breakdown of students' place of birth, results in findings of limited use. Therefore, we will attempt to explore the differences between parents' region of birth in more detail in future research.

Figure 14: Student Achievement in Reading by Parents' Place of Birth

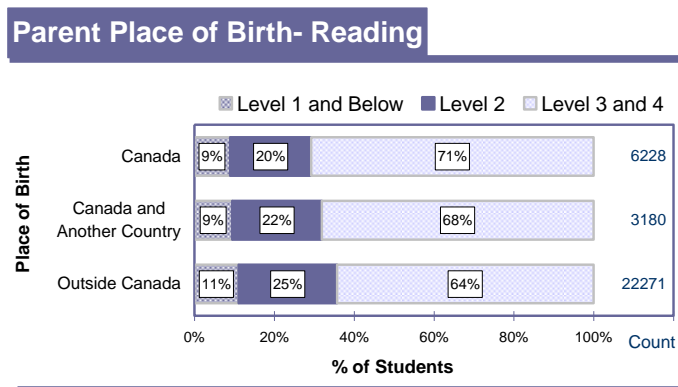


Figure 15: Student Achievement in Writing by Parents' Place of Birth

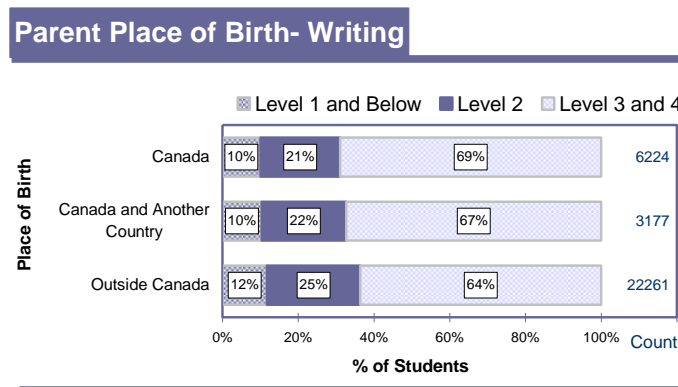


Figure 16: Student Achievement in Mathematics by Parents' Place of Birth

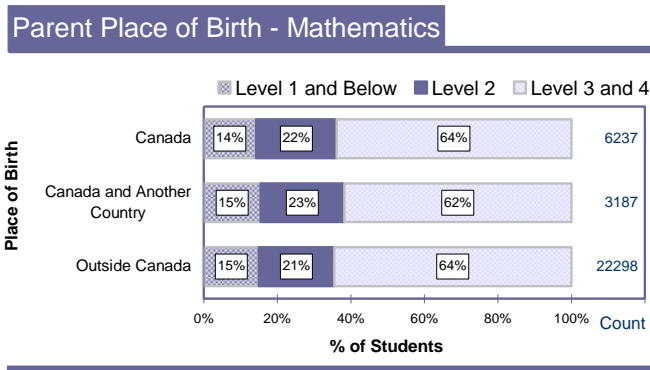
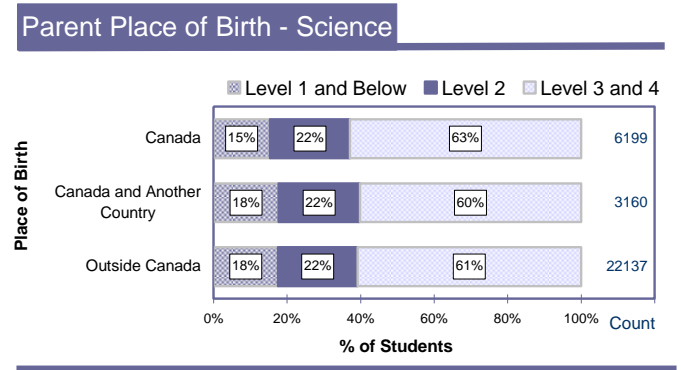


Figure 17: Student Achievement in Science by Parents' Place of Birth



Parental Presence at Home

Students with both parents present at home are more likely to achieve or exceed the provincial standard when compared to those students who are living with one parent. Most students (69% respectively) with two parents achieve or exceed the provincial standard in both Reading and Writing. About half of the students living with single parents (either with father or mother only) achieve or exceed the provincial standard in Reading, Writing, Mathematics, and Science (see Figures 18-21).

Figure 18: Student Achievement in Reading by Parental Presence at Home⁸

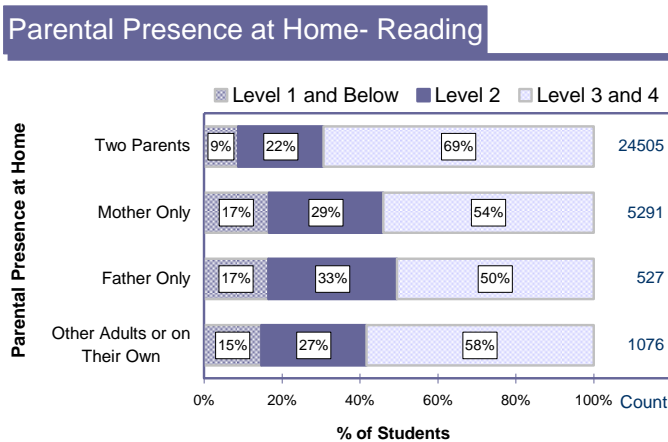
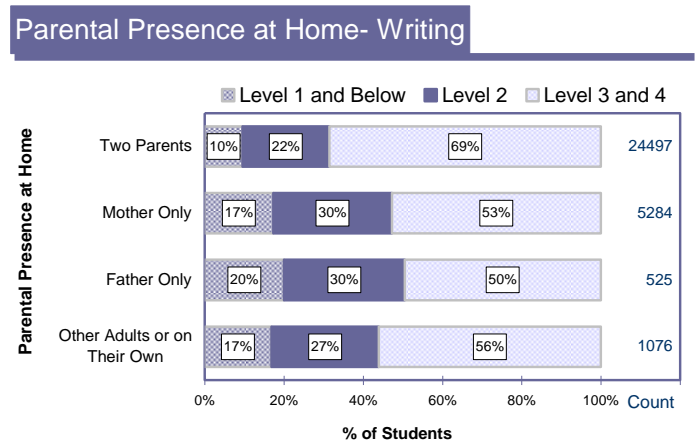


Figure 19: Student Achievement in Writing by Parental Presence at Home



⁸ Other Adults or on Their Own include: father and step mother, mother and step father, half the time with each of my parents, foster parent(s), adult relatives or guardians, group home adults, on my own, friends, and other

Figure 20: Student Achievement in Mathematics by Parental Presence at Home

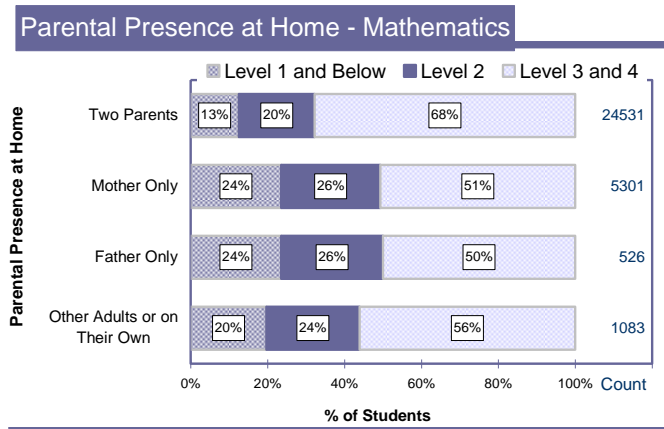
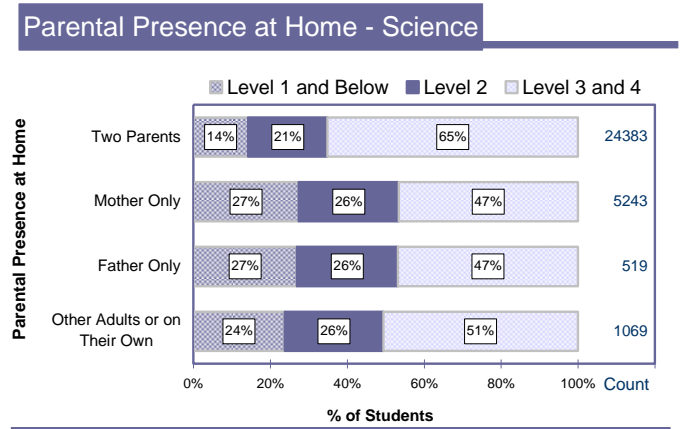


Figure 21: Student Achievement in Science by Parental Presence at Home



Parents' Educational Background

“Parents play an important role in their children’s learning. Aside from being actively involved in their children’s education, parents also provide a home environment that can affect learning” (Education Matters 2005, para.11).

Our findings suggest that if parents have attended university their children are more likely to achieve or exceed the provincial standard compared to those students whose parents did not attend university. The majority (at least 73%) of students whose parents attended university achieve or exceed the provincial standard in Reading, Writing, Mathematics, and Science (see Figures 22-29).

Figure 22: Student Achievement in Reading by Mother's Education

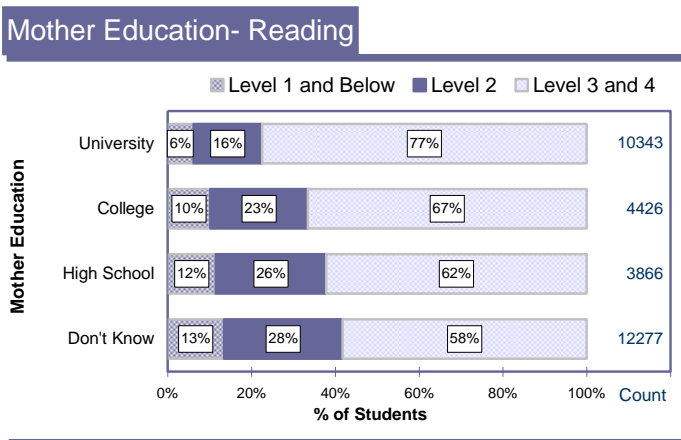


Figure 23: Student Achievement in Writing by Mother's Education

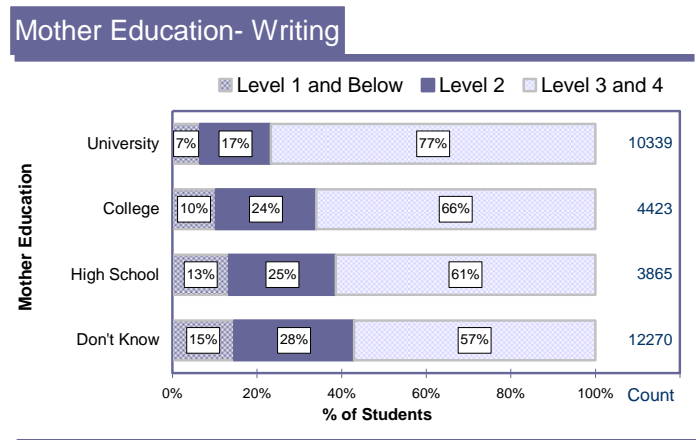


Figure 24: Student Achievement in Mathematics by Mother's Education

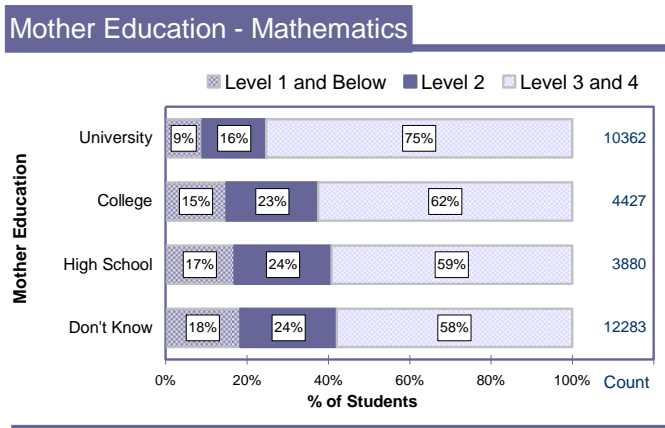


Figure 25: Student Achievement in Science by Mother's Education

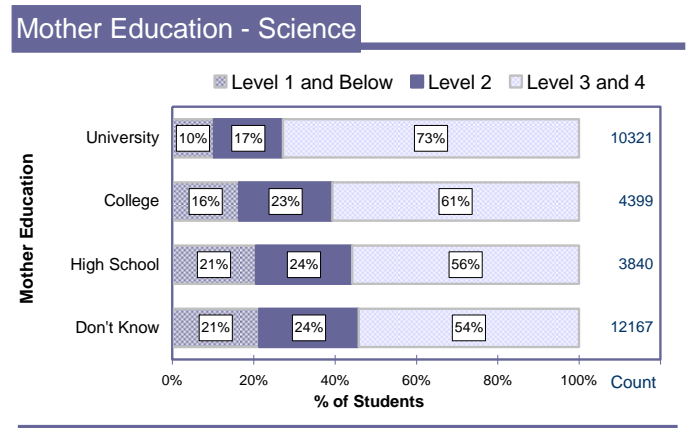


Figure 26: Student Achievement in Reading by Father's Education

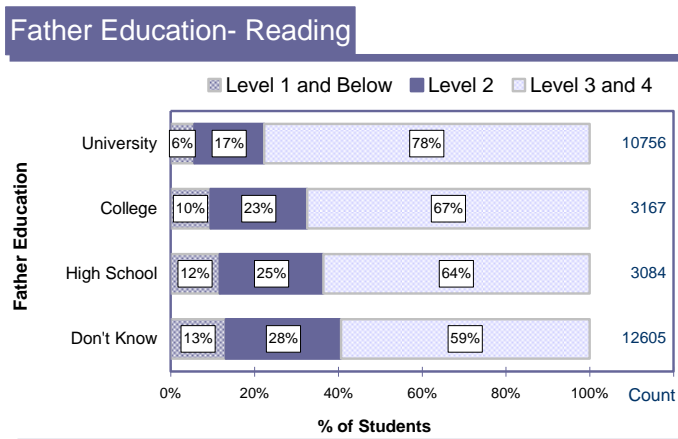


Figure 27: Student Achievement in Writing by Father's Education

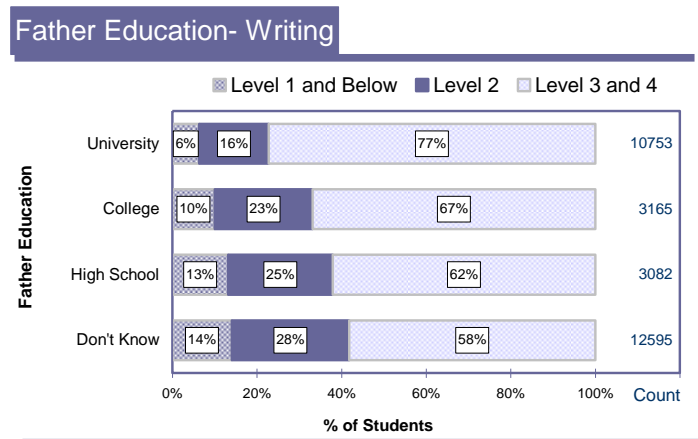


Figure 28: Student Achievement in Mathematics by Father's Education

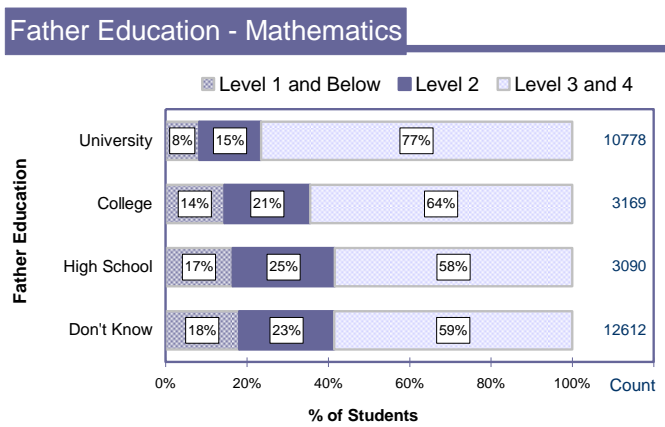
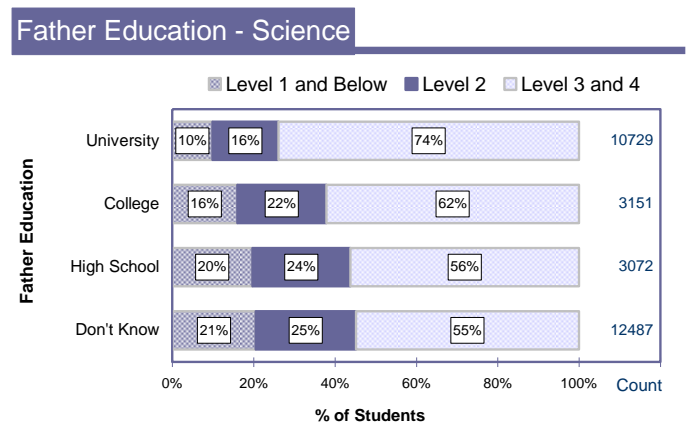


Figure 29: Student Achievement in Science by Father's Education



Family Socio-Economic Status (SES)

Parents' occupation is used as an indicator of Family Socio-Economic Status. When comparing students' achievement with their socio-economic status, more than three quarters of the students whose parents are professionals tend to achieve or exceed the provincial standard in Reading, Writing, Mathematics, and Science compared to just over half of the students whose parents work in unskilled positions or those with no income (see Figures 30-33).

Figure 30: Student Achievement in Reading by Family SES

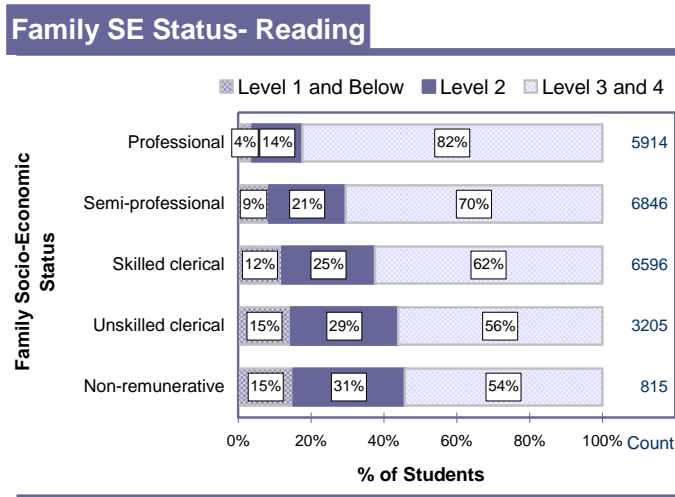


Figure 31: Student Achievement in Writing by Family SES

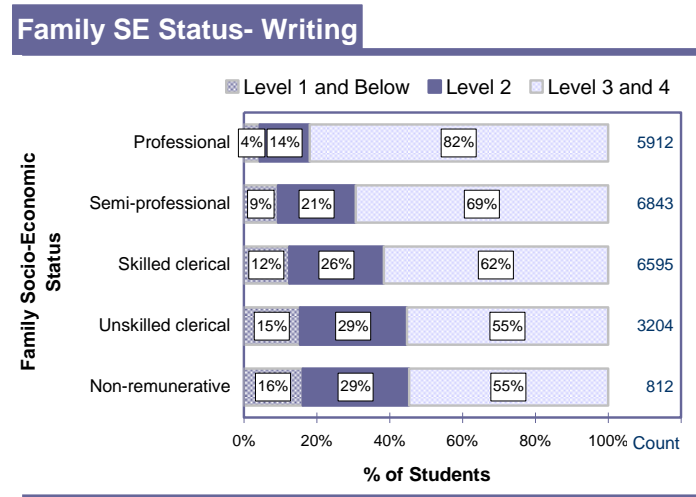


Figure 32: Student Achievement in Mathematics by Family SES

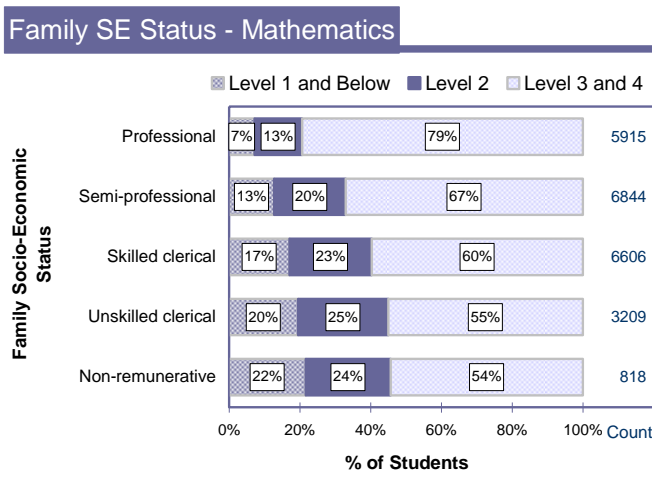
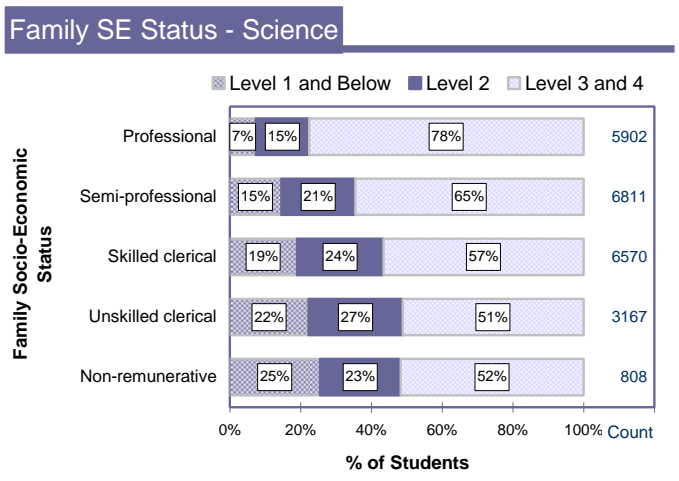


Figure 33: Student Achievement in Science by Family SES



These patterns are similar with recent international studies. For example, analysis of the PISA 2003 and 2006 results show that students from families with higher socio-economic status also more likely to perform better in Mathematics and Science (Human Resources and Skills Development Canada, 2004; Human Resources and Skills Development Canada, 2007; OECD, 2006).

SECTION II: RESULTS AND DISCUSSION: GRADES 9 and 10

As described in the Introduction (pp. 8-9) we look at five Grade 9 cohort achievement variables: Grade 9 cohort credit accumulation, achievement in English-ESL/ELD, Mathematics, Science, and Geography courses. We also look at first-time eligible (Grade 10) student success in achieving the EQAO Literacy Test (OSSLT). In looking at OSSLT achievement, we categorize students as Successful or 'Other' (failed the test, were deferred, were absent, or were exempted).

Student Demographic Characteristics and Student Achievement

Gender

Male students in Grades 9 and 10 have clearly lower performance in all secondary indicators: Grade 9 Credit Accumulation, Grade 9 English-ESL/ELD, Mathematics, Science, Geography, and the Grade 10 Literacy test. The findings show that the gap is greatest for English-ESL/ELD. This pattern is consistent with all key Toronto District School Board (TDSB) secondary achievement studies done in the past twenty years, starting with the 1987 Toronto Every Secondary Student Survey (e.g. Cheng et al, 1989; Brown, 1993; Yau et al, 1993; Turner, 1996; Brown, 2006) (see Figures 34-39).

Figure 34: Gr. 9 Student Achievement for At-Risk Students by Gender

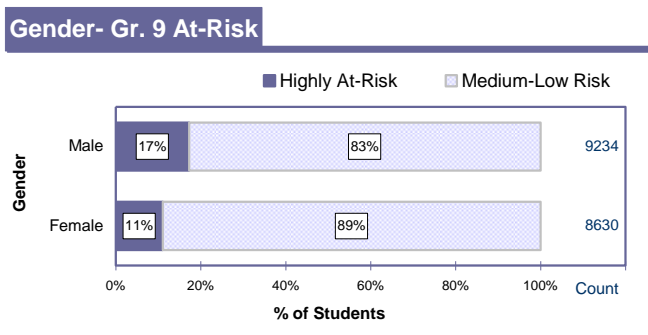


Figure 35: Gr. 9 Student Achievement in English-ESL/ELD by Gender

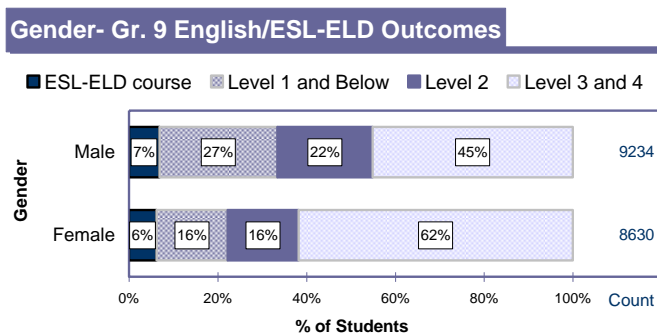


Figure 36: Grade 9 Student Achievement in Mathematics by Gender

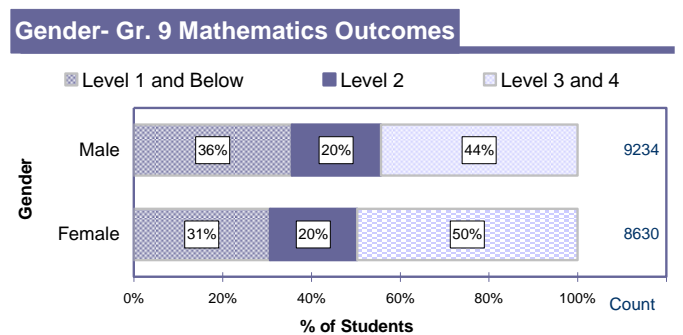


Figure 37: Grade 9 Student Achievement in Science by Gender

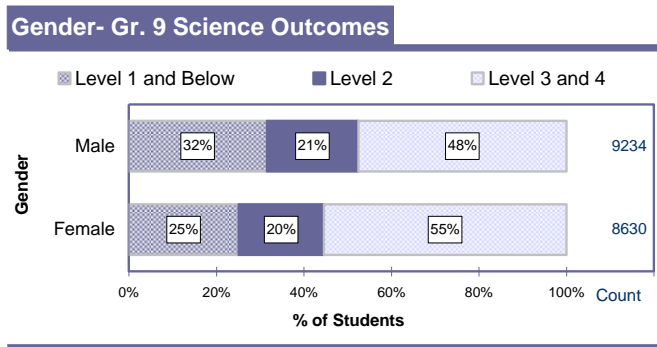


Figure 38: Grade 9 Student Achievement in Geography by Gender

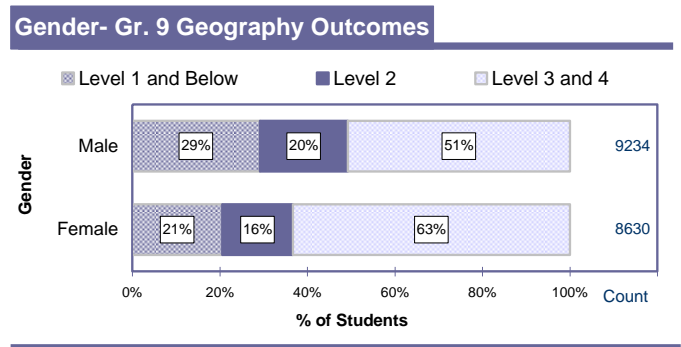
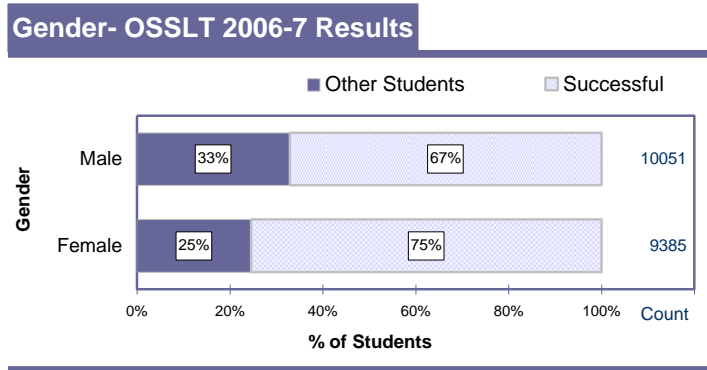


Figure 39: Student Achievement for OSSLT 2006-7 Results by Gender⁹



Age of Student

In the TDSB Grade 9 cohorts, about 19 in every 20 students is age-appropriate (14 years of age), while about 1 in 20 are a year older (15 years) and a very small proportion (under 1%) are a year younger (13 years). Although we do not have the reasons why some students arrive in the TDSB's secondary school a year later, one possible explanation is retention (grade-failing) in the elementary panel. There is a clear relationship of elementary retention with future at-risk behavior (Roderick, 1995; Thompson & Cunningham, 2000). Grade 9 cohort students who are a year older are clearly much more at-risk than those age-appropriate: e.g., they are over twice more likely to be at-risk by credit accumulation than their age-appropriate peers (34% to 13%). This difference is in fact lower than in previous years, showing that while older students face daunting challenges, there has been improvement (see Figures 40-44).

⁹ Other students are first-time eligible students who failed the test or were absent, deferred or exempt
 26 R04(Mgmt\StudentCensus\2006StudentCensusLinkingDemographicDataWithStudentAchievement)esrb.3457

Figure 40: Gr. 9 Student Achievement for At-Risk Students by Age

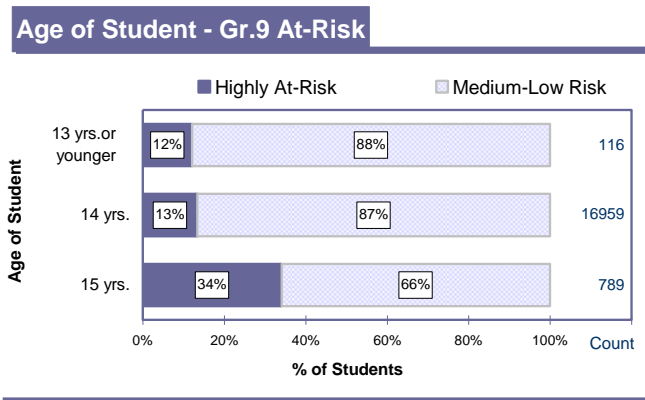


Figure 41: Gr. 9 Student Achievement in English-ESL/ELD by Age

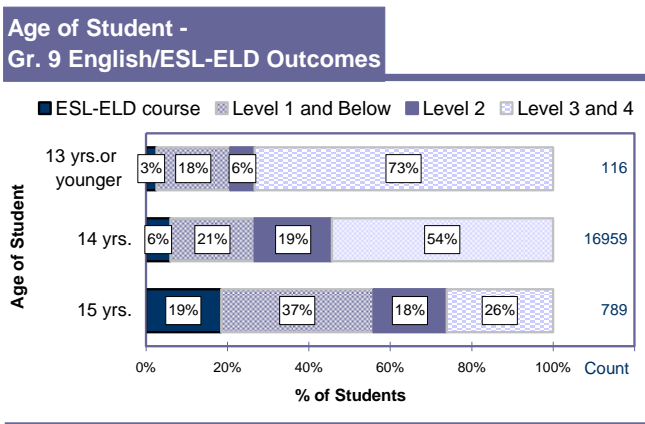


Figure 42: Gr. 9 Student Achievement in Mathematics by Age

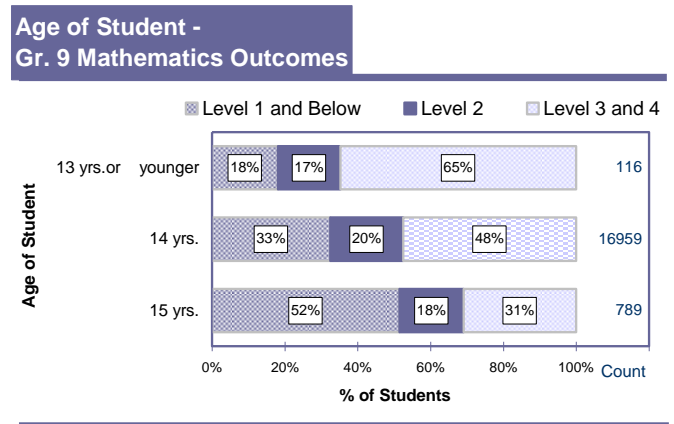


Figure 43: Gr. 9 Student Achievement in Science by Age

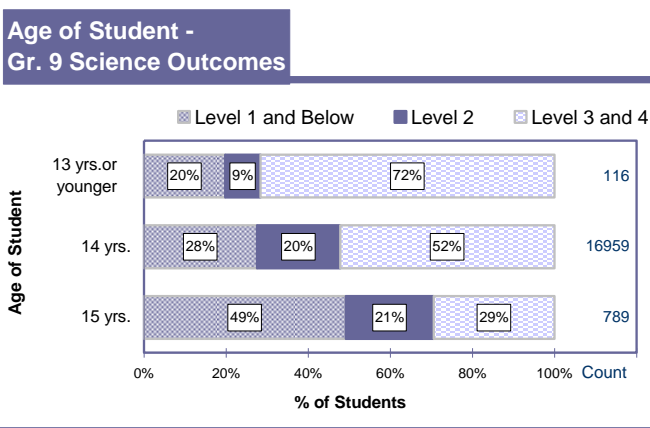
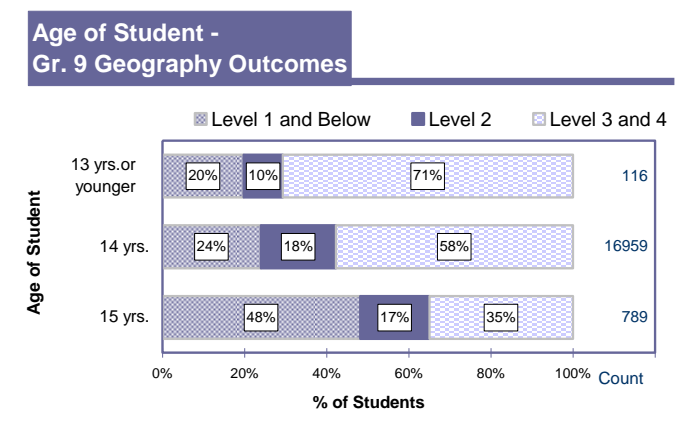
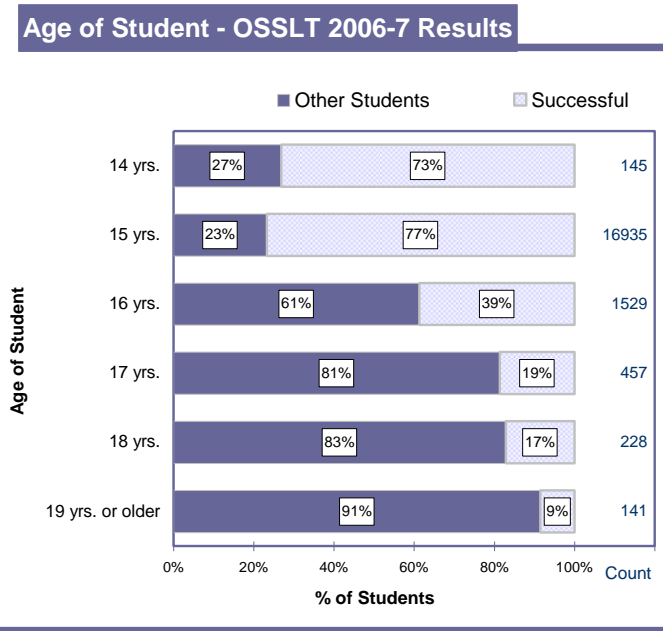


Figure 44: Gr. 9 Student Achievement in Geography by Age



Looking at first-time eligible Grade 10 students taking the OSSLT, a similar gap is observed. Over three quarters (77%) of age-appropriate 15 year old students pass the test the first time, slightly higher than the 71% overall pass rate. But little over a third of 16 year olds (1 year older than age-appropriate) pass the test. For the over 800 students who are 17 years of age (2 years older than age-appropriate) or older, the pass rate is less than 1 in 5 (see Figure 45).

Figure 45: Student Achievement for OSSLT 2006-7 Results by Age



Student's Region of Birth

Two years ago, the analysis of five years of the TDSB Grade 9 credit accumulation patterns according to Region of Birth found a general pattern: “students born in the English-speaking Caribbean, Central and South America/Mexico, and Eastern Africa tend to be more highly at-risk than the average; students born in Eastern Europe, South Asia, and Eastern Asia tend to be less highly at-risk than the average; students born in Canada tend to have average at-risk (in part because most students are born in Canada).” (Brown 2006, p.28). As seen in the following tables, the pattern has continued with Grade 9 credit accumulation and Mathematics, Science, and Geography achievement. The pattern is less consistent with English-ESL/ELD and the Grade 10 OSSLT, in part because of the higher proportion of recent arrivals (see Tables 6-10).

**Table 6: Gr. 9 Cohort Student Achievement in Credit Accumulation
by Region of Birth**

Region of Birth	Credit Accumulation		
	Six or fewer credits by August 2007	Seven or more credits by August 2007	Total
	%	%	N
Canada	15%	85%	11776
Central & South American & Mexico	23%	77%	316
Eastern Africa	23%	77%	181
Eastern Asia	8%	92%	1626
Eastern Europe	9%	91%	600
English-speaking Caribbean and Region	36%	64%	282
South & Western Europe	12%	88%	193
South Asia	9%	91%	1574
Southeast Asia	17%	84%	230
US	13%	87%	127
Western Asia	16%	84%	696

**Table 7: Gr. 9 Cohort Student Achievement in English-ESL/ELD
by Region of Birth**

Region of Birth	English-ESLD				
	ESL/ELD	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	%	N
Canada	0%	24%	20%	56%	11776
Central & South American & Mexico	13%	27%	23%	37%	316
Eastern Africa	13%	32%	23%	33%	181
Eastern Asia	30%	8%	11%	51%	1626
Eastern Europe	14%	14%	15%	57%	600
English-speaking Caribbean and region	5%	43%	19%	34%	282
South & Western Europe	8%	16%	19%	57%	193
South Asia	15%	15%	20%	51%	1574
Southeast Asia	18%	20%	17%	45%	230
US	1%	23%	18%	58%	127
Western Asia	21%	22%	19%	37%	696

Table 8: Student Achievement in Mathematics and Science by Region of Birth

Region of Birth	Mathematics				Science			
	Level 1 and Below	Level 2	Level 3 and 4	Total	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N	%	%	%	N
Canada	36%	21%	43%	11776	30%	22%	49%	11776
Central & South American & Mexico	45%	21%	34%	316	42%	22%	36%	316
Eastern Africa	54%	19%	27%	181	44%	23%	34%	181
Eastern Asia	15%	12%	74%	1626	18%	13%	69%	1626
Eastern Europe	24%	17%	60%	600	21%	19%	60%	600
English-speaking Caribbean and Region	60%	20%	20%	282	51%	21%	28%	282
South & Western Europe	25%	22%	53%	193	30%	21%	50%	193
South Asia	27%	19%	53%	1574	22%	19%	60%	1574
Southeast Asia	29%	22%	49%	230	27%	16%	57%	230
US	31%	22%	47%	127	29%	16%	55%	127
Western Asia	38%	22%	40%	696	36%	20%	44%	696

Table 9: Student Achievement in Geography by Region of Birth

Region of Birth	Geography			
	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N
Canada	26%	19%	55%	11776
Central & South American & Mexico	33%	23%	44%	316
Eastern Africa	38%	29%	33%	181
Eastern Asia	16%	11%	73%	1626
Eastern Europe	20%	16%	65%	600
English-speaking Caribbean and Region	50%	17%	33%	282
South & Western Europe	22%	16%	63%	193
South Asia	19%	17%	64%	1574
Southeast Asia	24%	19%	58%	230
US	27%	18%	55%	127
Western Asia	30%	21%	49%	696

Table 10: Student Achievement in the Ontario Secondary School Literacy Test (OSSLT) by Region of Birth

Region of Birth	First-time eligible students		
	Other Students (failed, absent, deferred, exempt)	Successful	Total
	%	%	N
Canada	23%	77%	11864
Central & South American & Mexico	46%	54%	383
Eastern Africa	49%	52%	272
Eastern Asia	38%	62%	2079
Eastern Europe	23%	77%	793
English-speaking Caribbean and Region	67%	33%	388
South & Western Europe	21%	79%	220
South Asia	36%	64%	1830
Southeast Asia	41%	59%	303
US	23%	77%	151
Western Asia	48%	52%	858

Student's Racial Background

As mentioned in Section I it should be noted that variation in academic achievement does exist within each racial group in terms of the students' Region of Birth. One of the current initiatives of the TDSB to close the educational achievement gap for all students is to improve the success of Black students¹⁰.

Grade 9 cohort students who describe themselves as East Asian, South Asian, Southeast Asian, and White have at-risk rates below the TDSB total, while those who describe themselves as Middle Eastern and Mixed have at-risk rates slightly above that of the TDSB total. Those describing themselves as Black or Latin are more likely to be at-risk (23% for Latin and 26% for Black).¹¹ A similar distribution is seen in cohort achievement in the four mandatory subjects. For example, 71% of East Asian, 59% of South Asian, 57% of Southeast Asian and 54% of White students are at the provincial standard in Science, compared to 47% of Mixed, 40% of Middle Eastern, 34% of Latin and 30% of Black students. With the Grade 10 OSSLT, the pattern is less noticeable in part due to English as a Second Language (ESL) and recent immigration. Still, self-identified Black students have the lowest OSSLT pass rate (see Figures 46-51).

¹⁰ On January 29, 2008 the TDSB Board of Trustees voted in support of innovative strategies for improving the success of Black students. See: http://www.tdsb.on.ca/about_us/media_room/Room.asp?show=allNews&view=detailed&self=9563

¹¹ Data are not reported for Aboriginal Students, because reporting standards were not met. Only racial groups with 100 or more students are shown.

Figure 46: Gr. 9 Student Achievement for At-Risk Students by Racial Background

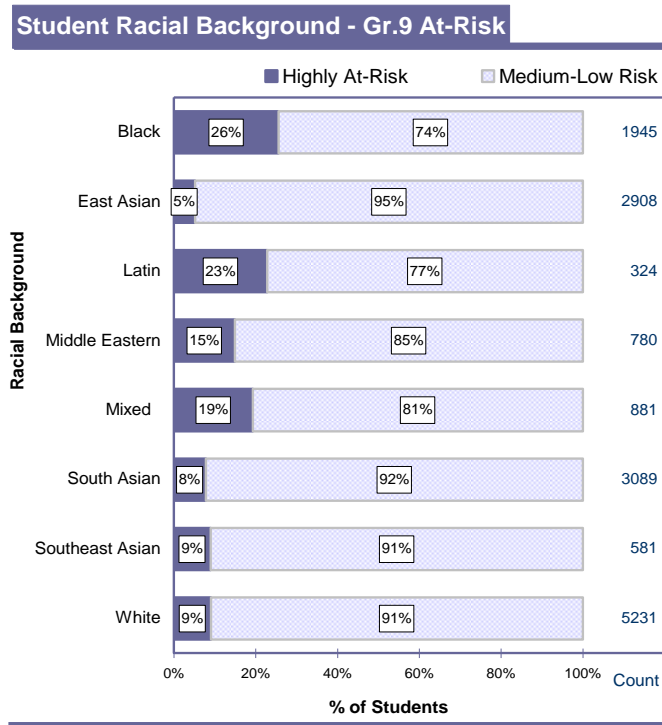


Figure 47: Gr. 9 Student Achievement in English-ESL/ELD By Racial Background

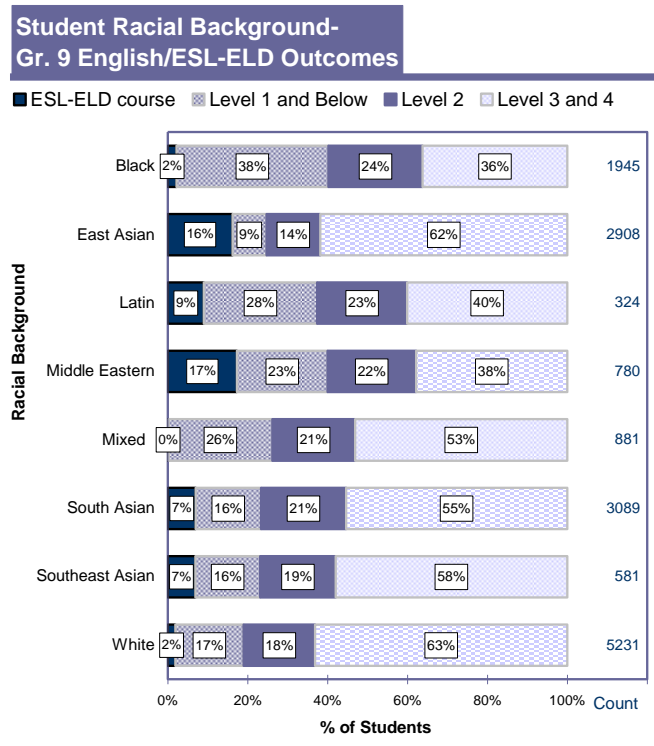


Figure 48: Gr. 9 Student Achievement in Mathematics by Racial Background

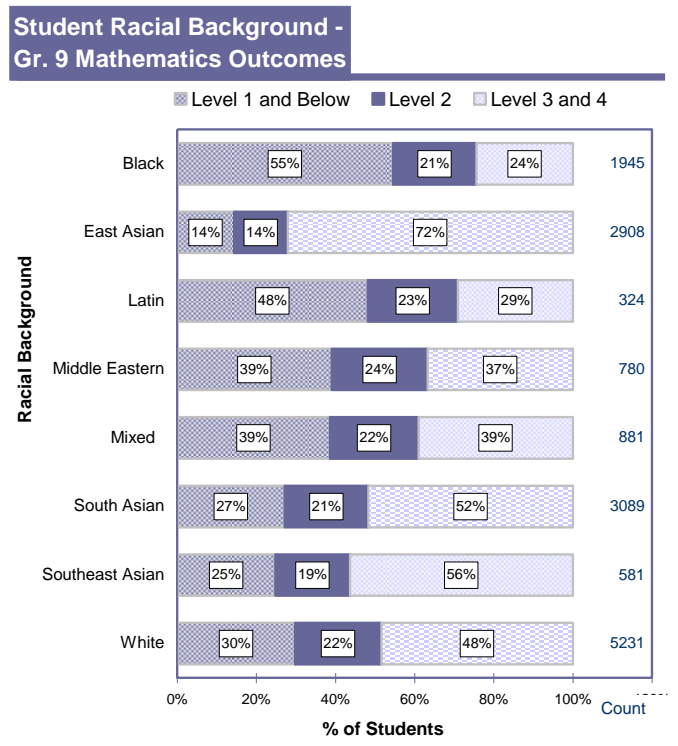


Figure 49: Gr. 9 Student Achievement in Science by Racial Background

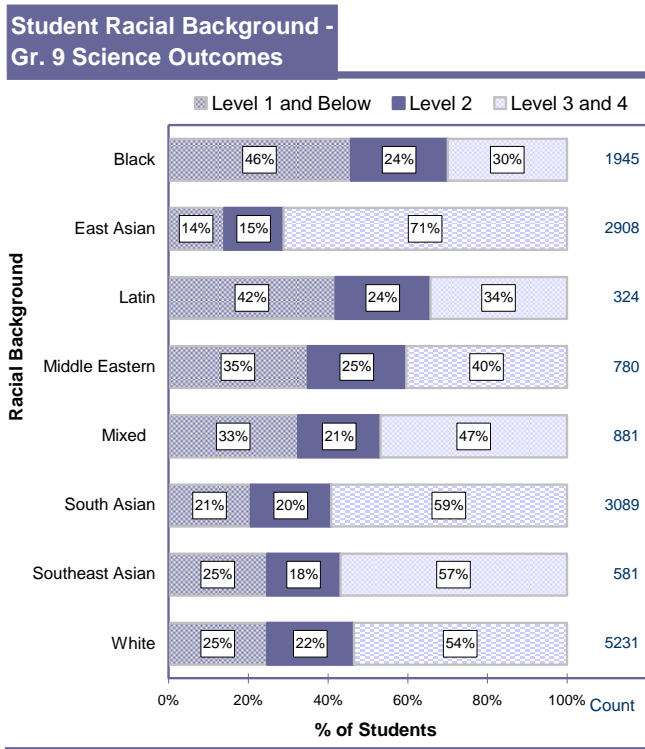


Figure 50: Gr. 9 Student Achievement in Geography by Racial Background

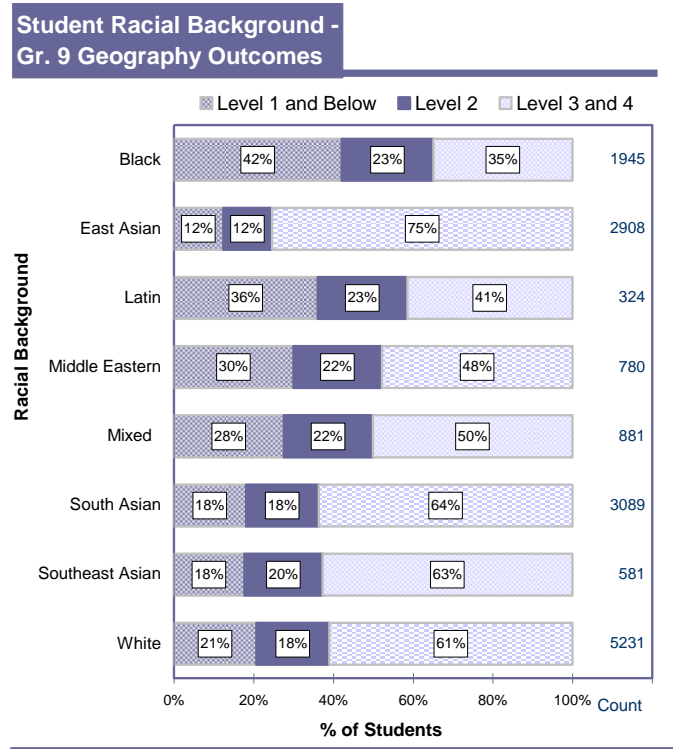
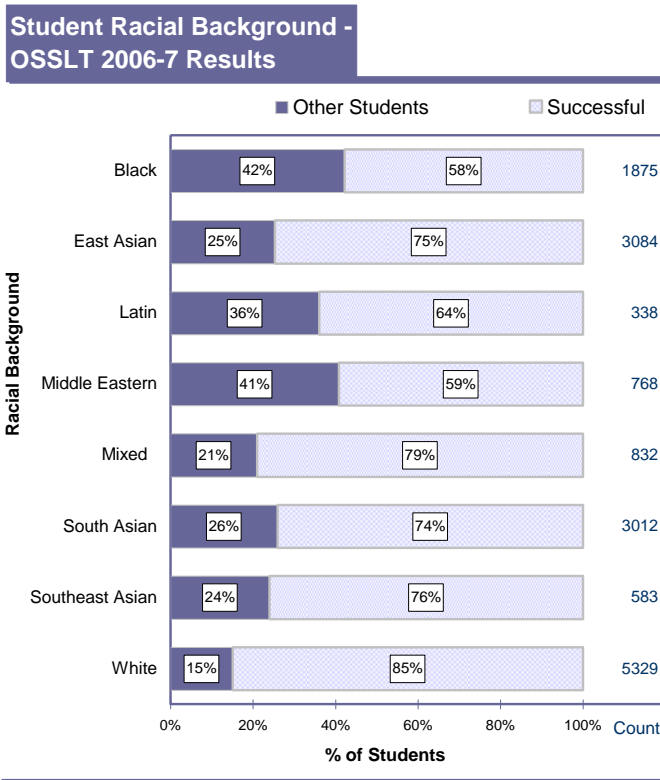


Figure 51: Student Achievement for OSSLT 2006-7 Results by Racial Background



To look in more detail at achievement of self-identified Black students, achievement is examined according to three regions of birth: those born in Canada; those born in the English-speaking Caribbean; and those born in Africa (the 5 regions of Africa are combined into one).

Looking at the pivotal variable of Grade 9 credit accumulation, self-identified Black students born in Canada and the Caribbean have an at-risk rate much higher than the full TDSB population (26% for Canadian born and 31% for English-speaking Caribbean born) while those born in Africa at 21% have an at-risk rate that is higher than the TDSB population but lower than the other two groups: a pattern also seen in Geography, Mathematics and Science. (This is not the case with Grade 9 English and OSSLT, at least partly due to the much higher proportion of African-born students taking ESL/ELD).

In general, self-identified Black students born in the English-speaking Caribbean have the highest at-risk rates in credit accumulation, subjects, and the OSSLT (see Tables 11-15).

Table 11: Gr. 9 Cohort Student Achievement of Self-identified Black Students in Credit Accumulation by Region of Birth

Region of Birth	Credit Accumulation		
	Six or fewer credits by August 2007	Seven or more credits by August 2007	Total
	%	%	N
Africa	21%	79%	208
Canada	26%	74%	1483
English Speaking Caribbean	31%	69%	191

Table 12: Gr. 9 Cohort Student Achievement of Self-identified Black Students in English-ESL/ELD by Region of Birth

Region of Birth	English-ESL/ELD				
	ESL/ELD	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	%	N
Africa	14%	31%	20%	35%	208
Canada	0%	39%	25%	36%	1483
English Speaking Caribbean	6%	37%	19%	38%	191

Table 13: Student Achievement of Self-identified Black Students in Mathematics and Science by Region of Birth

Region of Birth	Mathematics				Science			
	Level 1 and Below	Level 2	Level 3 and 4	Total	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N	%	%	%	N
Africa	51%	22%	26%	208	42%	23%	35%	208
Canada	55%	21%	24%	1483	46%	25%	29%	1483
English Speaking Caribbean	59%	18%	23%	191	49%	22%	29%	191

Table 14: Student Achievement of Self-identified Black Students in Geography by Region of Birth

Region of Birth	Geography			
	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N
Africa	38%	27%	36%	208
Canada	42%	24%	34%	1483
English Speaking Caribbean	48%	18%	34%	191

Table 15: Student Achievement of Self-identified Black Students in the Ontario Secondary School Literacy Test (OSSLT) by Region of Birth

Region of Birth	First-time eligible students		
	Other Students (failed, absent, deferred, exempt)	Successful	Total
	%	%	N
Africa	49%	51%	269
Canada	38%	62%	1299
English Speaking Caribbean	61%	39%	231

Student's Language

There are at least 80 languages spoken by students in the TDSB. This study looks at the languages spoken by 100 or more students. In general, students speaking English (the largest group, accounting for about half the students) have achievement levels somewhat below the average (18% are highly at-risk compared to 14% for the full cohort). Students speaking Somali, Spanish, and Dari have much higher at-risk levels (21% of Dari-speaking Grade 9 students, 27% of Spanish-speaking Grade 9 students, are highly at-risk). They are also most likely to be lower-performing (average of below 60%) in all four mandatory Grade 9 credits). Other language groups (Portuguese, Persian-Farsi, and Greek) have lower achievement in some subjects, yet performance in others is not as problematic. Thus, Portuguese students have credit accumulation at-risk rates only slightly higher than English for Grade 9 credit accumulation (19%), but are more likely to be lower-performing on subject achievement (e.g. 46% have an average below 60% in Mathematics).

High achievement by student language is somewhat more difficult to put into a consistent pattern. Students speaking Bengali, Chinese, Gujarati, Korean, Russian, Tamil, Hindi, Punjabi, and Vietnamese have higher Grade 9 credit accumulation and usually (but not always) have higher achievement in Science, Geography, and Mathematics.

The pattern is not as consistent for English and Grade 10 OSSLT Literacy. In part this is because many of these students are recent immigrants and are still in the initial 5-7 year timeframe considered necessary to master the English language. We have found from other cohort tracking research that recent immigrants tend to be behind in OSSLT first-time eligible pass rates, but over time make up the differences (Brown, in press). It is probable that we will see the same with many of the recent immigrants in the TDSB over 2006-7 (see Tables 16-20).

Table 16: Gr. 9 Cohort Student Achievement in Credit Accumulation by Key Languages

Language	Credit Accumulation		
	Six or fewer credits by August 2007	Seven or more credits by August 2007	Total
	%	%	N
Albanian	10%	90%	107
Arabic	12%	88%	191
Bengali	8%	92%	282
Chinese	7%	93%	2385
Dari	21%	79%	134
English	18%	82%	8440
French	10%	90%	131
Greek	14%	86%	134
Gujarati	8%	93%	292

Table 16 (Continued): Gr. 9 Cohort Student Achievement in Credit Accumulation by Key

Language	Credit Accumulation		
	Six or fewer credits by August 2007	Seven or more credits by August 2007	Total
	%	%	N
Hindi	5%	95%	169
Korean	4%	96%	383
Persian (Farsi)	16%	84%	390
Portuguese	19%	81%	109
Punjabi	6%	94%	283
Russian	8%	92%	298
Serbian	4%	97%	113
Somali	25%	75%	319
Spanish	27%	73%	350
Tagalog (Pilipino)	12%	88%	195
Tamil	7%	93%	821
Urdu	12%	89%	601
Vietnamese	9%	91%	319

Table 17: Gr. 9 Cohort Student Achievement in English-ESL/ELD by Key Languages

Language	English-ESL/ELD				
	ESL/ELD	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	%	N
Albanian	9%	13%	18%	60%	107
Arabic	14%	24%	22%	40%	191
Bengali	8%	13%	18%	61%	282
Chinese	17%	10%	14%	60%	2385
Dari	33%	21%	19%	27%	134
English	0%	26%	20%	54%	8440
French	2%	22%	15%	61%	131
Greek	3%	24%	25%	49%	134
Gujarati	11%	13%	23%	54%	292
Hindi	8%	13%	18%	62%	169
Korean	25%	8%	15%	53%	383
Persian (Farsi)	18%	25%	20%	38%	390
Portuguese	5%	31%	23%	41%	109
Punjabi	9%	17%	18%	57%	283
Russian	18%	13%	18%	51%	298
Serbian	4%	12%	12%	73%	113
Somali	2%	45%	23%	30%	319
Spanish	10%	31%	22%	37%	350
Tagalog (Pilipino)	15%	20%	17%	48%	195
Tamil	4%	19%	23%	55%	821
Urdu	12%	19%	21%	48%	601
Vietnamese	3%	14%	19%	65%	319

Table 18: Student Achievement in Mathematics and Science by Key Languages

Language	Mathematics				Science			
	Level 1 and Below	Level 2	Level 3 and 4	Total	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N	%	%	%	N
Albanian	24%	22%	53%	107	29%	23%	48%	107
Arabic	37%	25%	38%	191	34%	19%	47%	191
Bengali	22%	19%	59%	282	17%	18%	65%	282
Chinese	16%	14%	70%	2385	16%	15%	69%	2385
Dari	43%	21%	37%	134	45%	22%	33%	134
English	40%	21%	39%	8440	33%	22%	45%	8440
French	29%	18%	53%	131	24%	22%	53%	131
Greek	40%	22%	37%	134	30%	25%	45%	134
Gujarati	20%	21%	59%	292	13%	16%	71%	292
Hindi	24%	17%	59%	169	14%	17%	69%	169
Korean	14%	15%	71%	383	15%	17%	68%	383
Persian (Farsi)	40%	24%	36%	390	38%	22%	40%	390
Portuguese	46%	25%	29%	109	34%	28%	38%	109
Punjabi	33%	22%	46%	283	24%	18%	58%	283
Russian	22%	21%	58%	298	21%	22%	57%	298
Serbian	14%	19%	67%	113	14%	16%	70%	113
Somali	60%	22%	18%	319	51%	26%	24%	319
Spanish	49%	23%	28%	350	46%	20%	34%	350
Tagalog (Pilipino)	30%	22%	48%	195	26%	17%	56%	195
Tamil	24%	20%	56%	821	20%	21%	59%	821
Urdu	32%	22%	47%	601	25%	20%	55%	601
Vietnamese	21%	17%	62%	319	23%	19%	57%	319

Table 19: Student Achievement in Geography by Key Languages

Language	Geography			
	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N
Albanian	21%	15%	65%	107
Arabic	25%	23%	52%	191
Bengali	15%	15%	70%	282
Chinese	14%	12%	73%	2385
Dari	40%	21%	39%	134
English	29%	19%	51%	8440
French	31%	16%	53%	131
Greek	28%	19%	54%	134
Gujarati	14%	13%	73%	292
Hindi	11%	20%	69%	169
Korean	14%	14%	72%	383
Persian (Farsi)	31%	23%	46%	390
Portuguese	35%	21%	44%	109

Table 19 (Continued): Student Achievement in Geography by Key Languages

Language	Geography			
	Level 1 and Below	Level 2	Level 3 and 4	Total
	%	%	%	N
Punjabi	19%	18%	63%	283
Russian	24%	19%	57%	298
Serbian	7%	10%	83%	113
Somali	44%	26%	30%	319
Spanish	40%	21%	39%	350
Tagalog (Pilipino)	20%	21%	60%	195
Tamil	19%	18%	63%	821
Urdu	20%	18%	62%	601
Vietnamese	17%	17%	66%	319

Table 20: Student Achievement in the Ontario Secondary School Literacy Test (OSSLT) by Key Languages

Language	First-time eligible students		
	Other Students (failed, absent, deferred, exempt)	Successful	Total
	%	%	N
Albanian	26%	75%	106
Arabic	36%	64%	217
Bengali	23%	77%	319
Chinese	28%	72%	2672
Dari	64%	36%	175
English	26%	75%	8809
French	21%	79%	139
Greek	27%	74%	147
Gujarati	34%	66%	333
Hindi	16%	84%	152
Korean	31%	69%	458
Persian (Farsi)	45%	55%	423
Portuguese	33%	67%	140
Punjabi	31%	69%	282
Russian	28%	72%	383
Serbian	13%	87%	149
Somali	43%	57%	323
Spanish	46%	54%	430
Tagalog (Pilipino)	39%	61%	228
Tamil	27%	73%	812
Urdu	34%	66%	674
Vietnamese	25%	75%	312

Student's Sexual Orientation

Students in the secondary panel answered a question about their sexual orientation. There are three main categories of responses: Heterosexual (93%), Lesbian/Gay/Bisexual/Transgender/Queer (LGBTQ) and Two-spirited (3%), and those 'unsure' (4%). Caution needs to be taken with the 'unsure' category, since it would appear that some answered this because they were unclear about what this terminology means (e.g., ESL students); while others answered this because they themselves were questioning their sexual orientation.

There are some differences between Heterosexual and LGBTQ students in the Grade 9 cohort: Heterosexual students are somewhat less at-risk than LGBTQ students (11% to 17%) and are somewhat more likely to be at the provincial average (70% or more) in the four mandatory Grade 9 subjects (e.g., 54% versus 42% at the provincial standard in Science, 60% versus 48% in Geography). However, there is no real difference in Grade 10 OSSLT results (78% of Heterosexual and 77% of LGBTQ students passed the first time). Following the Grade 9 students over their secondary careers will provide a more complete picture (see Figures 52-57).

Figure 52: Gr. 9 Student Achievement for At-Risk Students by Sexual Orientation

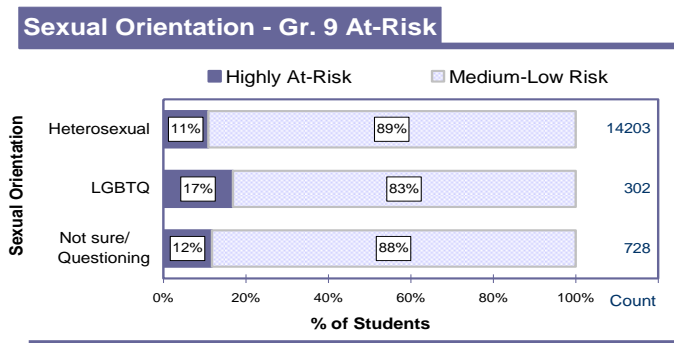


Figure 53: Gr. 9 Student Achievement in English-ESL/ELD by Sexual Orientation

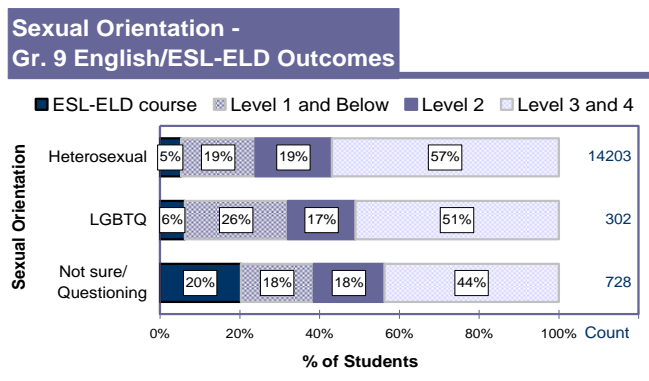


Figure 54: Gr. 9 Student Achievement in Mathematics by Sexual Orientation

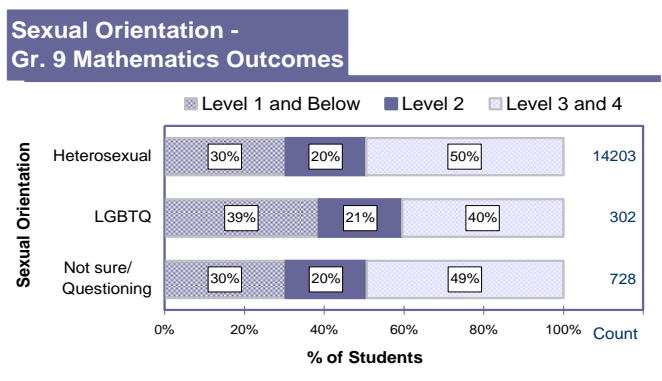


Figure 55: Gr. 9 Student Achievement in Science by Sexual Orientation

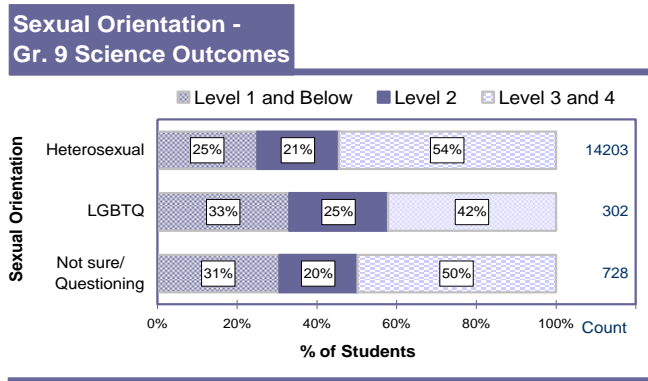


Figure 56: Gr. 9 Student Achievement in Geography by Sexual Orientation

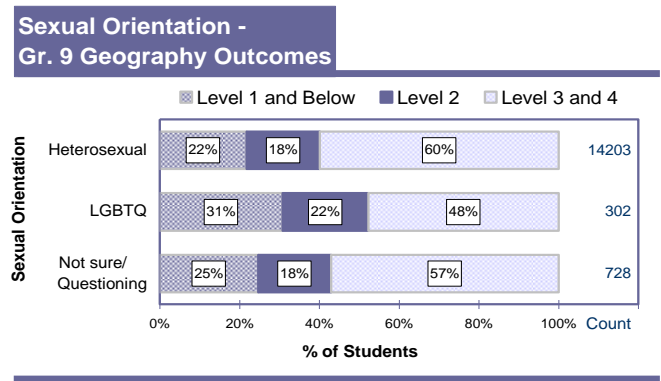
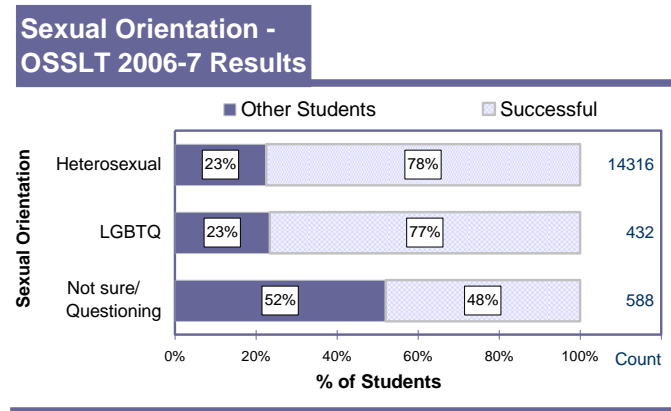


Figure 57: Student Achievement for OSSLT 2006-7 Results by Sexual Orientation



Family Background and Student Achievement

Parents' Place of Birth

It is noteworthy that the majority of students' parents were born outside of Canada (only a fifth had both parents who were born in Canada). Just as there is little difference in student achievement between those born in Canada and those born outside Canada, parents' place of birth is likewise not strongly related to student achievement. Thus, there is no difference in the Grade 9 cohort at-risk status (11% for each group). There are also limited differences in Geography and Science; in Mathematics, those whose parents were born outside Canada are slightly more likely to be at the provincial standard than those with one or both parents born in Canada. English achievement in contrast favors those whose parents were born in Canada, but closer examination shows that this is because of recent immigrants who are taking ESL/ELD rather than English courses. Recent immigration also accounts for most of the difference in Grade 10 (OSSLT) results.

Thus, a simple breakdown of parents' place of birth, like a simple breakdown of students' place of birth, results in findings of limited use. The next step will be looking in more detail at differences between parents' place of birth (a complex undertaking that will be dealt with in future analyses) (see Figures 58-63).

Figure 58: Gr. 9 Student Achievement for At-Risk Students by Parents' Place of Birth

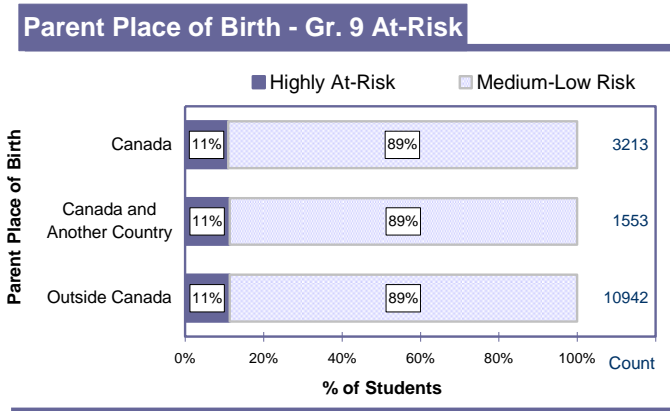


Figure 59: Gr. 9 Student Achievement in English-ESL/ELD by Parents' Place of Birth

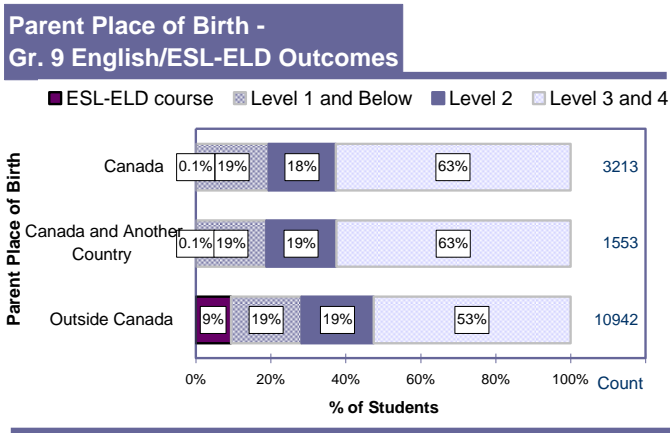


Figure 60: Gr. 9 Student Achievement in Mathematics by Parents' Place of Birth

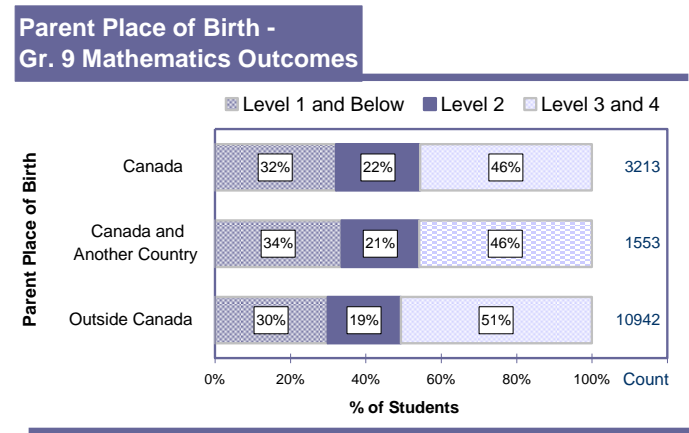


Figure 61: Gr. 9 Student Achievement in Science by Parents' Place of Birth

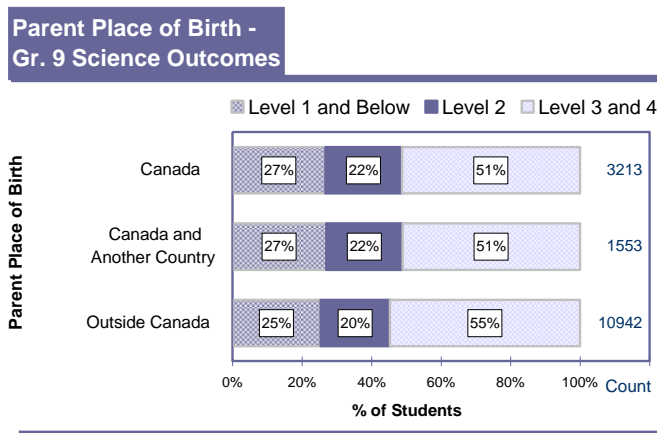


Figure 62: Gr. 9 Student Achievement in Geography by Parents' Place of Birth

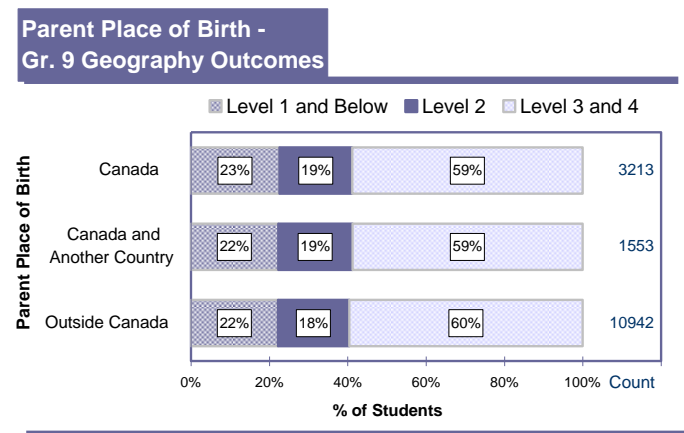
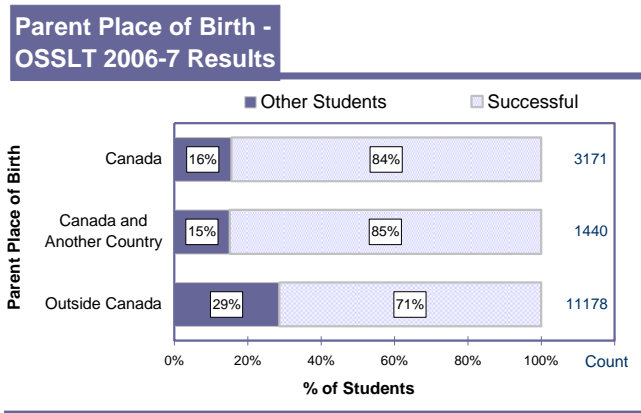


Figure 63: Student Achievement for OSSLT 2006-7 Results by Parents' Place of Birth



Parental Presence at Home

In a study of the previous generation of Grade 9 students, the dropout rate of students living with one parent was twice that of students living with both parents (Brown, 1993). We will not be able to provide comparable information on this cohort until Fall 2011, yet the 2006-7 achievement does show major differences according to parental presence. While 9% of Grade 9 cohort students living with both parents are at-risk, this rises to 20% of those living with mother only and 24% of those living with father only. Students living with both parents are more likely to achieve at the provincial standard in Mathematics, Geography, English, and Science than those living with one parent. First-time eligible Grade 10 students living with both parents are also more likely to pass the test the first time (80%), compared to 62% of those living with father only and 66% of those living with mother only (see Figures 64-69).

Figure 64: Gr. 9 Student Achievement for At-Risk Students by Parental Presence at Home

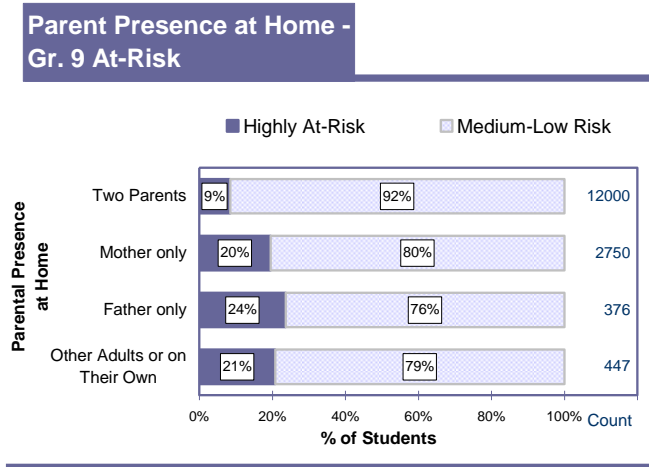


Figure 65: Gr. 9 Student Achievement in English-ESL/ELD by Parental Presence at Home

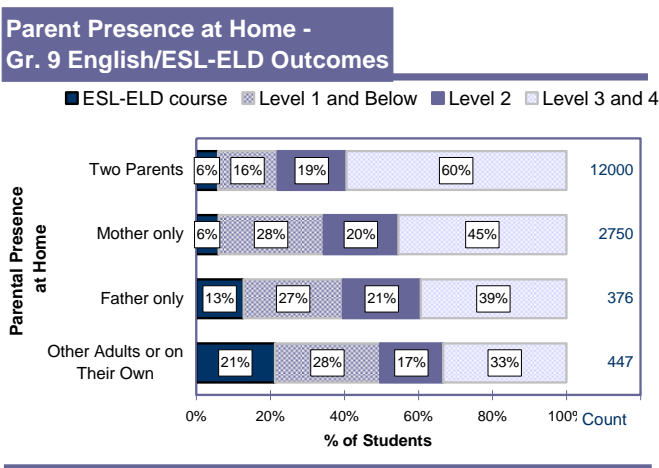


Figure 66: Gr. 9 Student Achievement in Mathematics by Parental Presence at Home

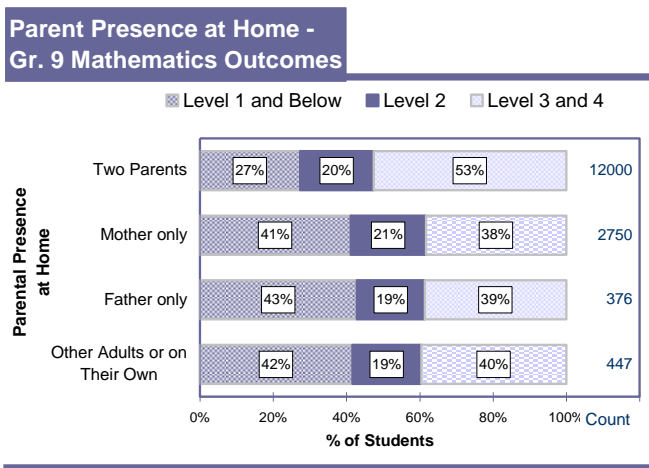


Figure 67: Gr. 9 Student Achievement in Science by Parental Presence at Home

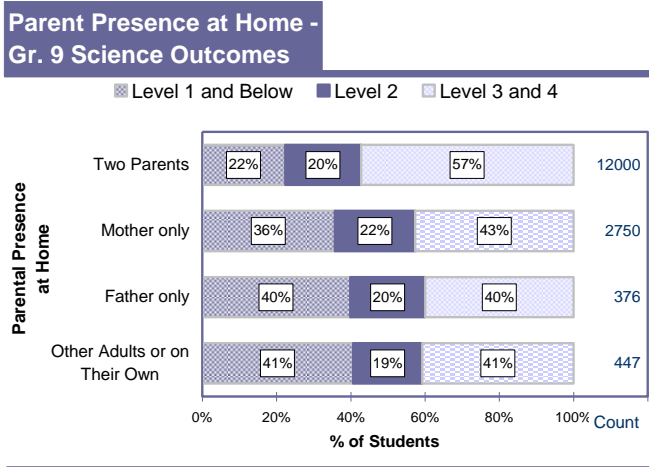


Figure 68: Gr. 9 Student Achievement in Geography by Parental Presence at Home

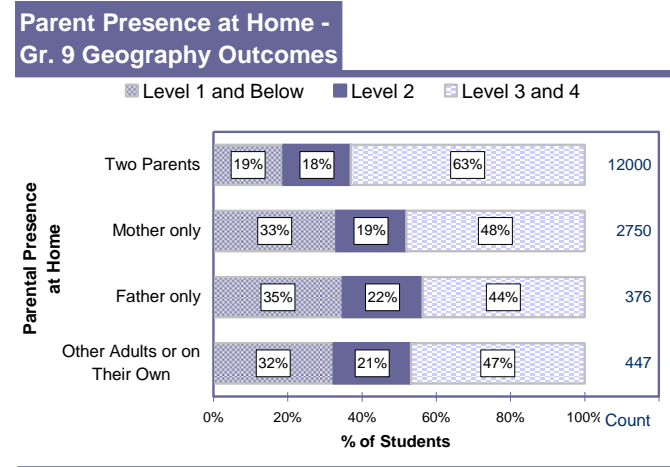
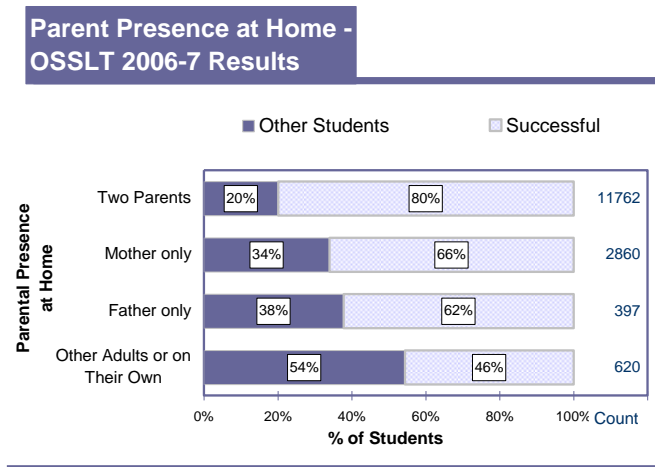


Figure 69: Student Achievement for OSSLT 2006-7 Results by Parental Presence at Home



Parents' Educational Background

Since the research attached to the Coleman Report over forty years ago, the educational level of students' parents (in particular, the education level of the mother) has been recognized as closely associated with student achievement. This can be seen with Student Census results. Of students whose fathers had a high school education, 13% are at-risk, compared to 5% where the father had a university education. Likewise, of students whose mothers had a high school education, 14% are at-risk, compared to 6% where the mother had a university education. Students with university-educated parents are much more likely than those with college or high school-educated parents to be at the provincial standard (70% or higher) in the four Grade 9 subject areas. They are also more likely to have passed the Grade 10 OSSLT Literacy test: 84% of students with university-education fathers and 85% of university-education mothers, compared to 73% of high school-educated fathers and 71% of high school-educated mothers (see Figures 70-81).

Figure 70: Gr. 9 Student Achievement for At-Risk Students by Mother's Education

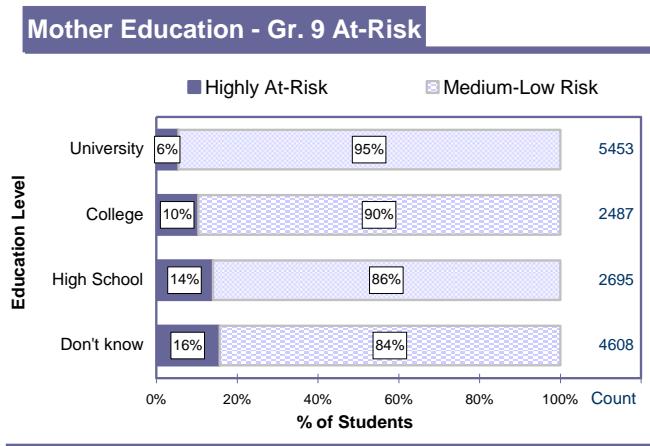


Figure 71: Gr. 9 Student Achievement for At-Risk Students by Father's Education

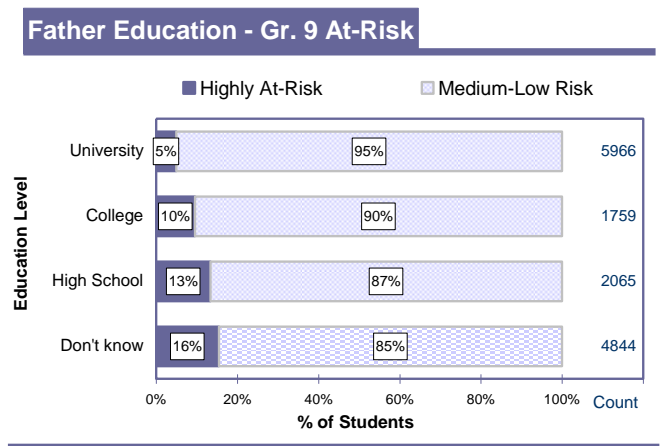


Figure 72: Gr. 9 Student Achievement in English-ESL/ELD by Mother's Education

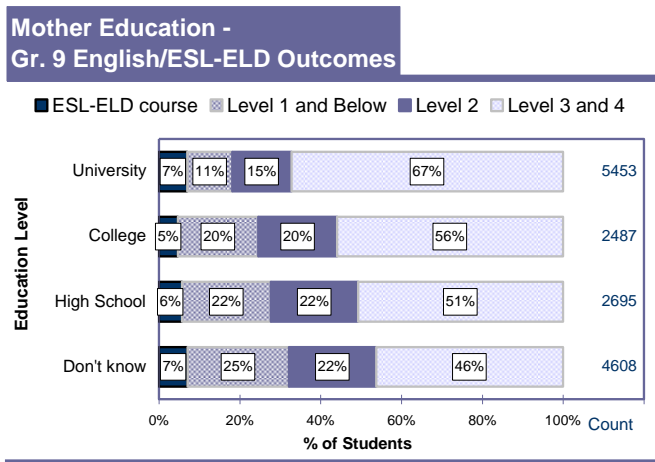


Figure 73: Gr. 9 Student Achievement in English-ESL/ELD by Father's Education

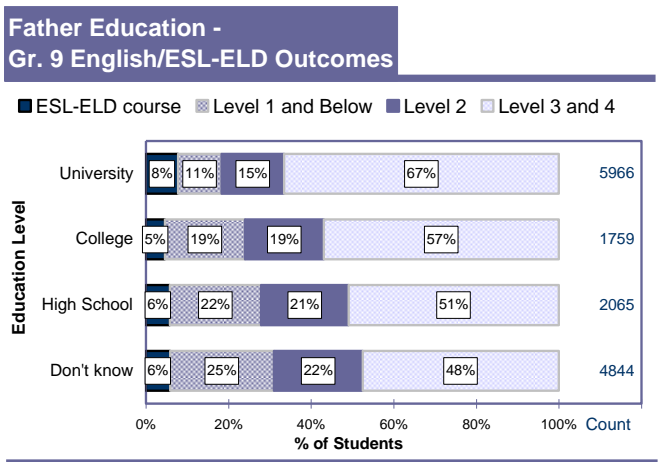


Figure 74: Gr. 9 Student Achievement in Mathematics by Mother's Education

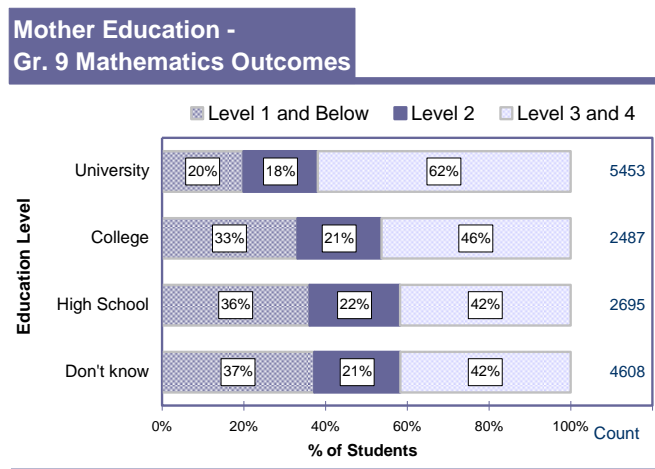


Figure 75: Gr. 9 Student Achievement in Mathematics by Father's Education

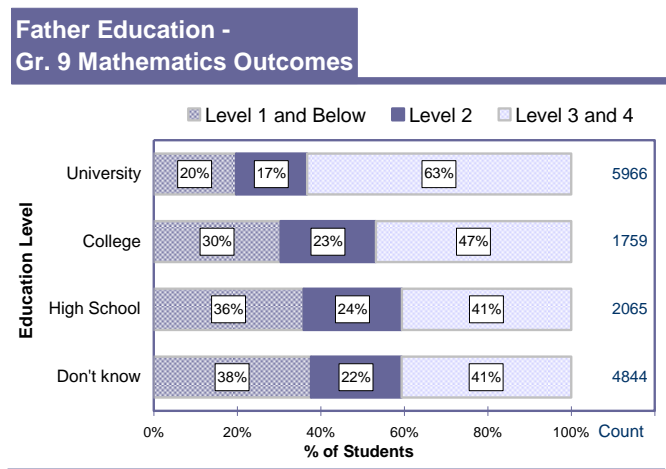


Figure 76: Gr. 9 Student Achievement in Science by Mother's Education

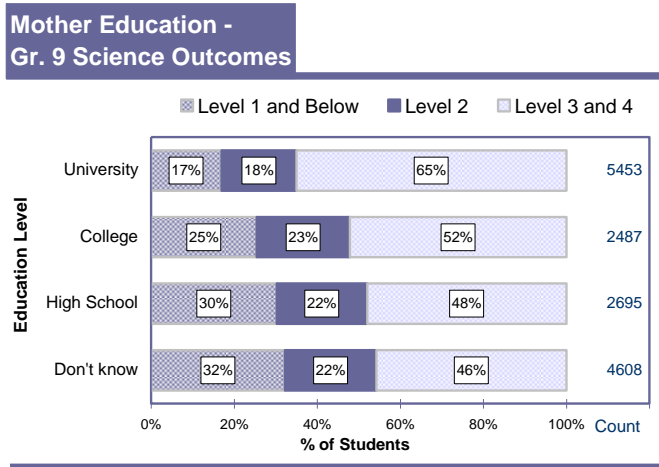


Figure 77: Gr. 9 Student Achievement in Science by Father's Education

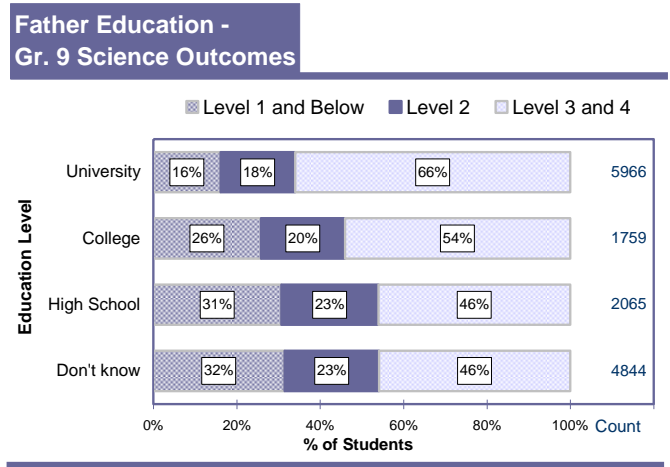


Figure 78: Gr. 9 Student Achievement in Geography by Mother's Education

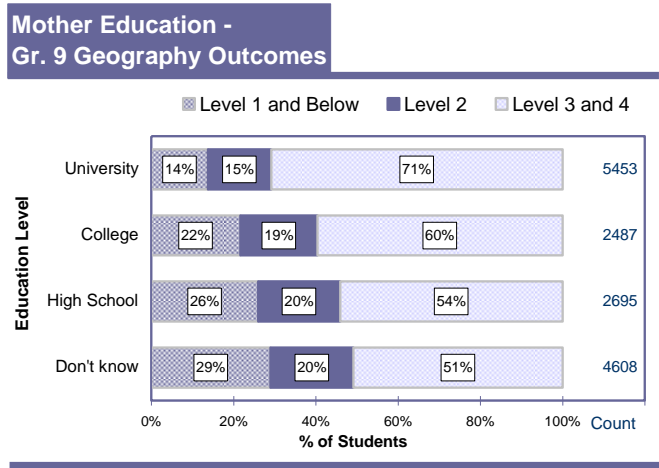


Figure 79: Gr. 9 Student Achievement in Geography by Father's Education

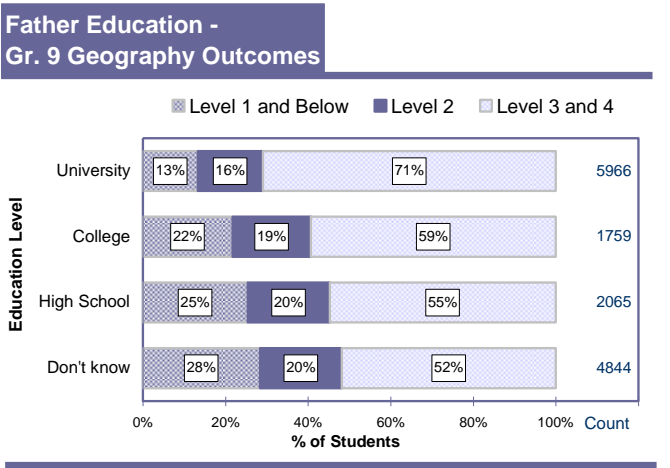


Figure 80: Student Achievement for OSSLT 2006-7 Results by Mother's Education

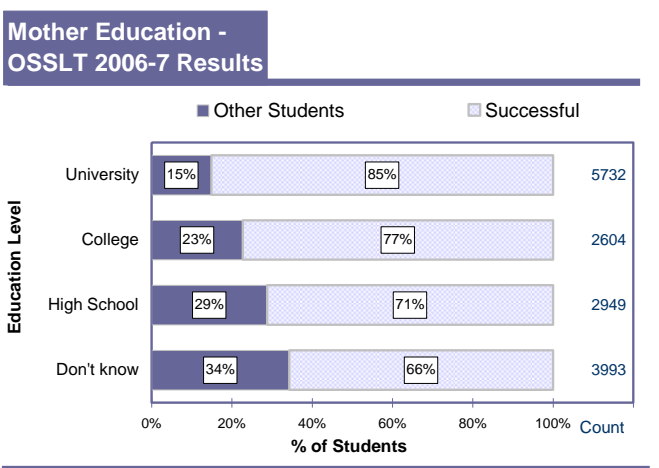
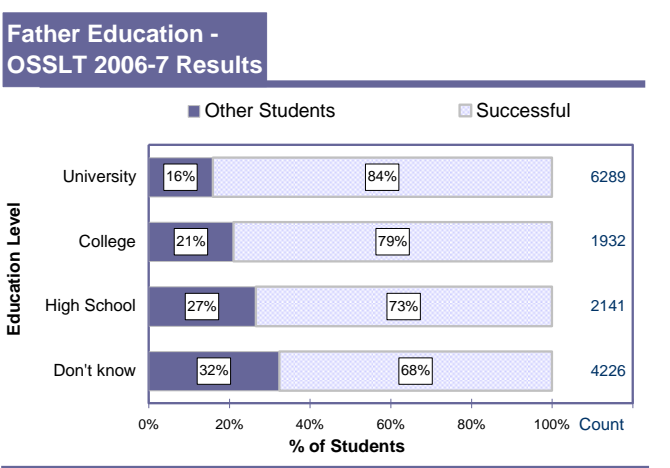


Figure 81: Student Achievement for OSSLT 2006-7 Results by Father's Education



Family Socio-Economic Status (SES)

There is a strong relationship of family socio-economic status to Grade 9-10 student achievement, similar to results from the 1987 and 1991 *Every Student Surveys* (Cheng et al. 1989, Yau et al., 1993). The proportion of Grade 9 cohort students with Professional parents/caregivers is approximately five times that of students with parents from Non-remunerative backgrounds (4% to 20%). Those from Professional backgrounds are much more likely to be at Levels 3 or 4 in all four subjects, and are more likely to have passed the Grade 10 OSSLT literacy test on the first administration (see Figures 82-87).

Figure 82: Gr. 9 Student Achievement for At-Risk Students by Family SES

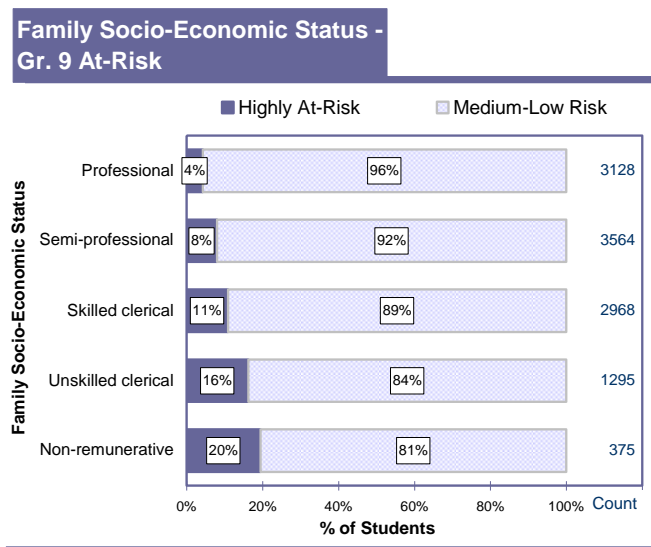


Figure 83: Gr. 9 Student Achievement in English-ESL/ELD by Family SES

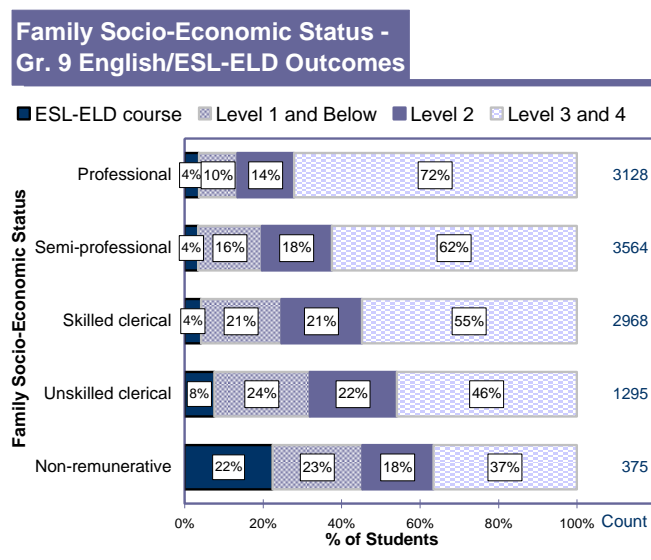


Figure 84: Gr. 9 Student Achievement in Mathematics by Family SES

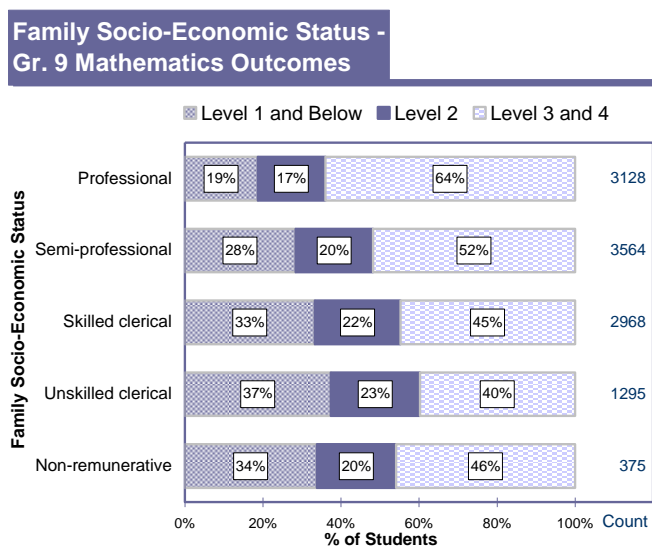


Figure 85: Gr. 9 Student Achievement in Science Outcomes by Family SES

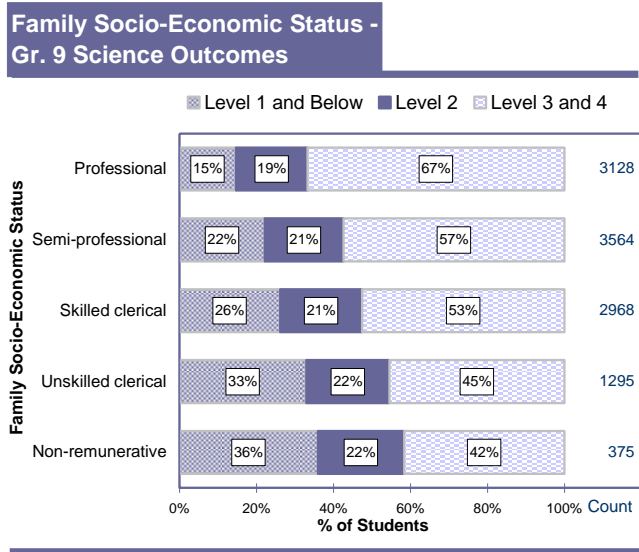


Figure 86: Gr. 9 Student Achievement in Geography by Family SES

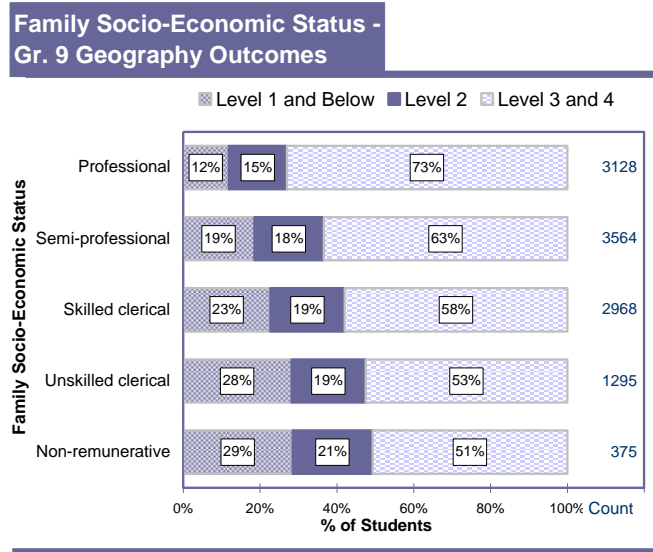
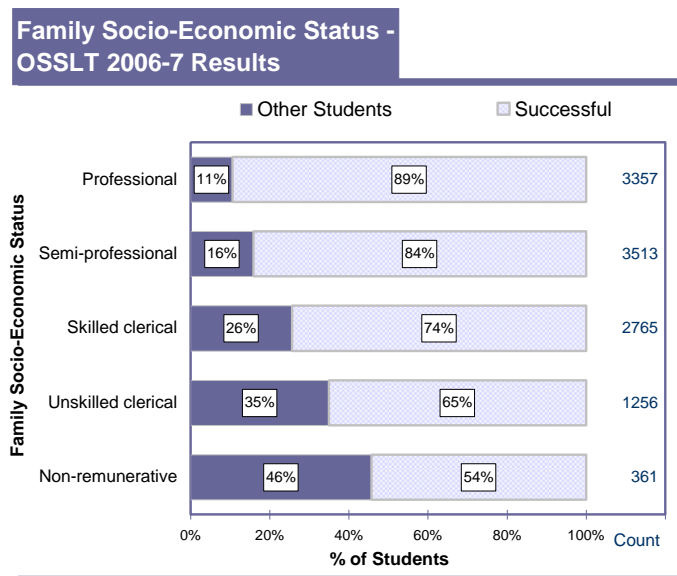


Figure 87: Student Achievement for OSSLT 2006-7 Results by Family SES



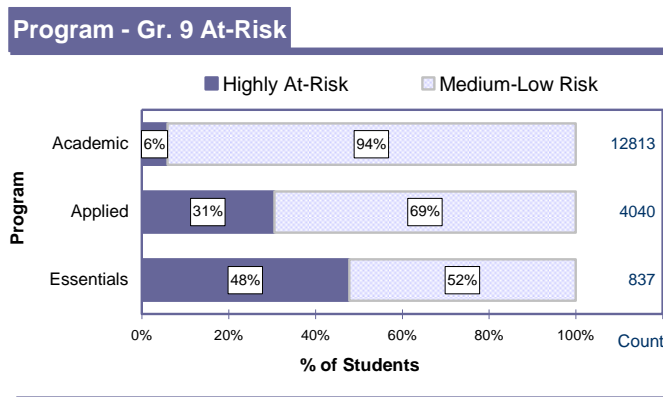
Student Program of Study

There had been a clear link between academic streaming and student achievement in the old OS:IS Ontario curriculum: students in the university bound Advanced stream had higher achievement levels than other secondary students in the General and Basic streams (e.g., Yau et al., 1993; King et al., 1988). Under the OSS curriculum introduced by the Ministry of Education in Fall 1999, the streams taken by secondary students were eliminated. Instead, students take Grade 9 and 10 courses in the Academic (university-directed) Program of Study, Applied (college-directed) Program of Study, and locally-developed Essentials (workplace-directed) Program. In Grades 11 and 12, students then take University, College,

Mixed and Workplace courses. However, cohort studies of these students found that those taking Academic courses in the new OSS curriculum tended to have characteristics similar to students who had been in the former OS:IS Advanced stream. In general, the differences of the university versus non-university streams have stayed the same or perhaps may have widened (King 2005; Brown, 2006).

In this Grade 9 cohort as with previous studies, we look at the majority of courses taken by the student in each program of study. The strong relationship described above can be seen in TDSB 2006-7 results. Thus, 6% of Grade 9 cohort students taking a majority of their courses in the Academic Program of Study are highly at-risk, compared to 31% of students taking most of their courses in the Applied Program and 48% taking most courses at the Essentials level. In looking at mandatory courses taken by the Grade 9 cohort, 60% of students taking Academic courses are at the provincial standard in Science (70% or more), compared to 31% of students taking Applied and Essentials courses – a pattern replicated with Geography, English, and Mathematics. Results of the OSSLT are even more pronounced: 87% of first-time eligible students taking Academic courses pass the first time, compared to 38% of students taking Applied and 8% of those taking Essentials.¹² Thus, the gap in achievement between university courses and non-university courses was observed a generation ago; it is still a key characteristic in the TDSB secondary panel (see Figures 88-93).

Figure 88: Gr. 9 Student Achievement for At-Risk Students by Program of Study



¹² The pattern is similar for the official release of EQAO results for both the OSSLT, but because streaming does not officially exist according to Ministry curriculum, the methodology is different. EQAO’s analysis of OSSLT according to Program of Study has varied, but for the past few years they have released results according to the Program of Study of the English course taken by the student at the time of writing the test. For Grade 9 Mathematics, EQAO looks at Academic and Applied courses (students taking Essentials Mathematics courses or those who dropped Mathematics are not included). Thus, a Grade 10 student who is repeating Grade 9 Mathematics at The Applied level but taking Academic Grade 10 English might be considered a Grade 9 Applied student in EQAO’s Mathematics test but a first-time eligible Academic student in the OSSLT. It is for this reason that this evaluation looks at the majority of courses taken, rather than the program of study of specific courses.

Figure 89: Gr. 9 Student Achievement in English-ESL/ELD by Program of Study

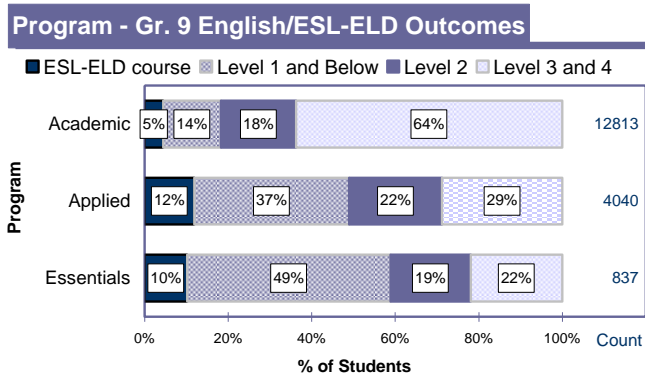


Figure 90: Gr. 9 Student Achievement in Mathematics by Program of Study

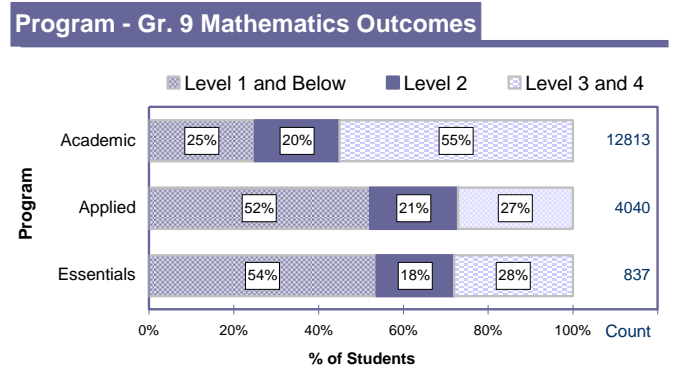


Figure 91: Gr. 9 Student Achievement in Science by Program of Study

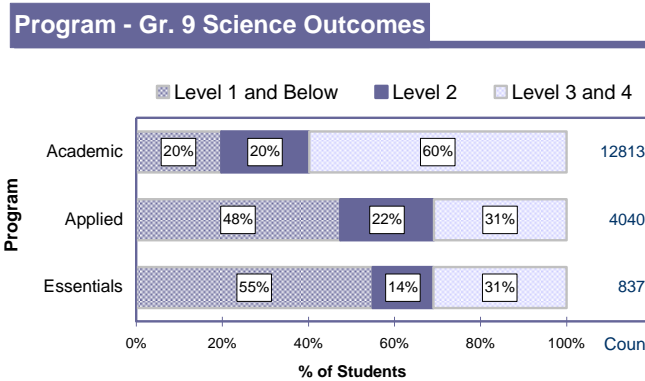


Figure 92: Gr. 9 Student Achievement in Geography by Program of Study

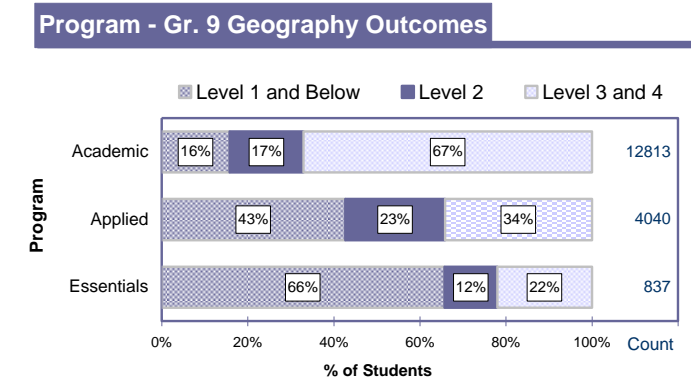
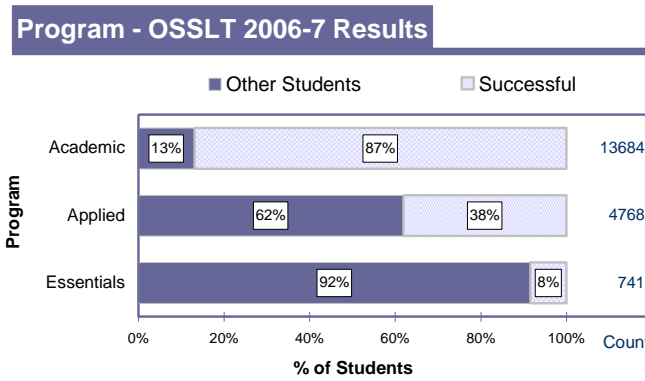


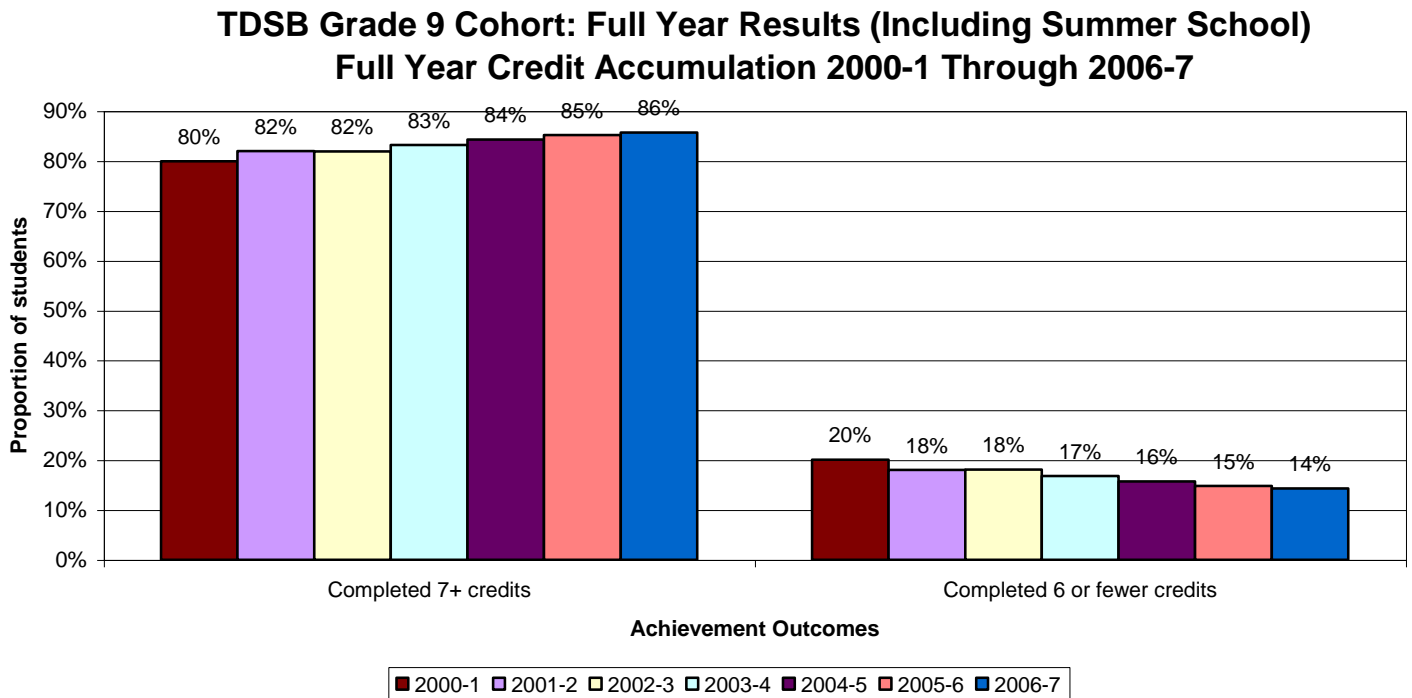
Figure 93: Student Achievement for OSSLT 2006-7 Results by Program of Study



CONCLUDING REMARKS

The more recent history of TDSB has found a gradual but important increase in both elementary and secondary school achievement. Thus, the proportion of highly 'at-risk' Grade 9 cohort students has incrementally declined over seven years, from 20% in 2000-1, to 14% in 2006-7. Likewise, the proportion of students at Level 1 or below in EQAO Grade 6 Mathematics has declined from 13% in 2000-1 to 10% in 2006-7. Similar growth patterns have been documented with EQAO's Grade 3 Reading, Writing, and Mathematics, Grade 6 Reading and Writing, Grade 9 Mathematics and the TDSB's Secondary Success Indicator's Grade 9 cohort Mathematics, Science, English-ESL/ELD, and Geography, Grade 10 credit accumulation, 17 year old graduation rates, and post-secondary applications. (For more detail, please refer to the TDSB's Environmental Scan 2008 and to Organizational Development's Secondary Success Indicator Fact Sheets for 2007-8, which are online at www.tdsb.on.ca).

Figure 94: TDSB Grade 9 Cohort: Full Year Results (Including Summer School)



That being said, this analysis finds that there are clear differences among groups of students. For example, male students, self-described Black students, student born in the English-speaking Caribbean, those speaking Spanish and Somali, students from more challenged socio-economic circumstances, and those living with one parent are more likely to have academic challenge in their first years of high school – findings seen in earlier TDSB research studies, some going back decades. Similar patterns are seen with elementary panel results, in looking at key Grade 7 and 8 Report Card results for 2006-7. These elementary results will serve as a baseline for future studies of the senior elementary panel.

It is clear that for a more precise examination of how these students are doing; we will need to follow them over their secondary school careers. For the 2006-7 Grade 7 and 8 students, this will allow us to observe the patterns of transition to high school. Looking at the 2006-7 Grade 9 cohorts will also enable us to compare some subgroups with much older information such as the results of the 1987 Grade 9 cohort study of the former Toronto Board. In addition, this will be important in order to get the full picture of achievement of recent immigrants (many did not pass the first administration of the Grade 10 literacy test but other research indicates that most will eventually complete this graduation requirement). Finally, we have mixed results with some groups of students, for example, in looking at sexual orientation; a longer term study may resolve some of these questions.

The analysis of student demographic characteristics and family background in relation to their achievement is essential for policy decision making and educational improvement. This analysis also provides evidence to evaluate the effectiveness of different types of educational programs and interventions within TDSB. Most of the studies of student achievement and the school information systems within the board have collected data on students' demographic and achievement characteristics. Though, this study is an attempt to provide stronger connections between student data, analyses and reporting for effective educational planning and decision making.

It should be noted that the tables and graphs show relationships and patterns, but they do not provide cause-and-effect relationships; nor is there a judgment of which of these variables are more important than others. To start the next step of what should be (to do it justice) an extended dialogue, we will be examining these variables through a number of statistical models. There will be a plan to initiate this process within a few months.

REFERENCES

- Asakawa, K. & Csikszentmihalyi, M. (2000). Feelings of connectedness and internalization of values in Asian American adolescents. *Journal of Youth and Adolescence*, 29,121-145.
- Brown, R. S. (1993). *A Follow-up of the Grade 9 Cohort of 1987 Every Secondary Student Survey Participants*. Toronto: Toronto Board of Education.
- Brown, R. S. (1997). *The Toronto Board Grade 9 Cohort of Fall 1991: A Five Year Tracking Study 1991-1996*. Toronto: Toronto Board of Education.
- Brown, R. S. (2006). *TDSB Secondary Student Success Indicators, 2004-2005*. Toronto: Toronto District School Board.
- Brown, R. S. (2006b). *The TDSB Grade 9 Cohort Study: A Five-Year Analysis 2000-2005*. Toronto: Toronto District School Board.
- Caplan, N., Choy, M. H., & Whitmore, J. K. (1992). Indochinese refugee families and academic achievement. *Scientific American*, February, pp. 36-42.
- Cheng, M., Tsuji, G., Yau, M., & Ziegler, S. (1989). *The Every Secondary Student Survey, Fall, 1987*. Toronto: Toronto Board of Education.
- Chen, C., & Stevenson, H. W. (1995). Motivation and mathematics achievement: A comparative study of Asian-American, Caucasian-American, and East Indian high school students. *Child Development*, 66,1215-1234.
- Chow, H.P.H. (2004). The effects of ethnic capital and family background on school performance: A case study of Chinese-Canadian adolescents in Calgary. *The Alberta Journal of Educational Research*, 50,323-326.
- Education Matters, (2005), Student achievement in mathematics – the roles of attitudes, perceptions and family background, 2(1) Catalogue number 81-004-XIE. Retrieved from <http://www.statcan.gc.ca/pub/81-004-x/2005001/7836-eng.htm>
- Human Resources and Skills Development Canada, Council of Ministers of Education, Canada and Statistics Canada (2004). *Measuring Up: Canadian Results of the OECD PISA Study: The Performance of Canada's Youth in Mathematics, Reading, Science and Problem Solving, 2003*, Vol. 2, Catalogue number 81-590-XIE2004001.
- Human Resources and Skills Development Canada, Council of Ministers of Education, Canada and Statistics Canada (2007). *Measuring up: Canadian Results of the OECD PISA Study. The Performance of Canada's Youth in Science, Reading and Mathematics: 2006 First Results for Canadians Aged 15*. Catalogue no. 81-590-XIE. Retrieved from: <http://www.statcan.gc.ca/pub/81-590-x/81-590-x2007001-eng.pdf>
- Johnson, R. (2002). *Using data to close the achievement gap: How to measure equity in our schools*. Thousand Oaks, CA: Corwin Press.
- King, A. (2005). *Double Cohort Study: Phase 4 Report*. Toronto: Ministry of Education.

- King, A., Warren, W., Michalski, & C., Pearl, J. (1988). *Improving Student Retention in Ontario Secondary Schools*. Toronto: Ministry of Education.
- Lavin-Loucks, D. (2006) "The Academic Achievement Gap", Williams Institute Research Brief, July.
- Machin, S. and McNally, S. (2005). Gender and Student Achievement in English Schools, *Oxford Review of Economic Policy*, 21, 357-372.
- Mizokakawa, D. T., & Ryckman, D. B. (1990). Attributions of academic success and failure: A comparison of six Asian-American ethnic groups. *Journal of Cross Cultural Psychology*, 21(4), 434-451.
- Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). *IEA's Progress in International Reading Literacy Study in Primary School in 40 Countries*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.
- Organisation for Economic Co-operation and Development (OECD), (2004), *Learning for Tomorrow's World: First Results from PISA 2003*. <http://www.pisa.oecd.org>
- OECD (2007). *PISA 2006: Science Competencies for Tomorrow's World*. Paris:OECD
- Ontario Ministry of Education and Training (1998). *Guide to the Provincial Report Card, Grades 1-8*. Toronto
- Roderick, M. (1995, December). *Grade retention and school dropout: Policy debate and research questions (Research Bulletin No. 15)*. Washington, DC: Phi Delta Kappa. Center for Evaluation, Development, and Research.
- Sanchirico, A. (1991). The importance of small-business ownership in Chinese American educational attainment. *Sociology of Education*, 64, 293-304.
- Stevenson, H. W., Stringier, J. W., Lee, S., Luckner, G. W., Kitamura, S., & Hsu, C. (1985). Cognitive performance and academic achievement of Japanese, Chinese, and American children. *Child Development*, 56(3), 718-734.
- TDSB (2005). Program and School Services Committee, Report No. 11, December 13, 2005 Closing the Achievement Gap (12-05-0858). Toronto: Toronto Board of Education. Retrieved from: http://www.tdsb.on.ca/boardroom/bd_agenda/uploads/minutes/2005/51214.pdf
- Thompson, C., & Cunningham, E. (2000). Retention and Social Promotion: Research and Implications for Policy. *ERIC Digest Number 161*. ERIC Clearinghouse on Urban Education New York NY. <http://www.ericdigests.org/2001-3/policy.htm>
- Turner, C., (1997). *Tracking Educational Outcomes for a Cohort of Grade 9 Students: 1991-1996*. Scarborough: Scarborough Board of Education.
- Valentina A., Bali, R. & Alvarez, M. (2004). The Race Gap in Student Achievement Scores: Longitudinal Evidence from a Racially Diverse School District *Policy Studies Journal* 32 (3), 393–415
- Yau, M., Cheng, M., & Ziegler, S. (1993). *The 1991 Every Secondary Student Survey, Part III: Program Level & Student Achievement*. Toronto: Toronto Board of Education.
- Yau, M. & O'Reilly, J. (2007). *2006 Student Census, Grades 7-12: System Overview*. Research Report, Toronto District School Board, October 2007.

