

CHOOSING COURSES FOR HIGH SCHOOL

Achievement gaps, informed decision-making, and inequality

In Ontario, every winter, students in grade 8 must choose between taking applied or academic courses in their core subjects for grade 9. The decisions they make will have a long-term impact.

The choice will affect their options during the rest of their years in high school, and after they graduate. It may also have an impact on their chances for success.

It is not clear that grade 8 students and their families have all the information they need to make these important decisions. Perhaps even more important, international evidence suggests that the fact they *have to* choose at such an early age may contribute to greater achievement gaps, and greater inequality.

ABILITY GROUPING VS STREAMING

There is no doubt that all students learn differently. For this reason, students are often grouped within schools or within classrooms. In fact, it is widely regarded as good practice to group students so that they receive different kinds of instruction and even different work—both of which take into account their different learning needs and backgrounds. This grouping can take place within or between classes.

Streaming (also known as “tracking”), on the other hand, divides groups of students for most or all of their courses.

In 1999, Ontario officially eliminated streaming. Students in grades 9 and 10 are no longer forced to pick between one *set* of courses or the other. Theoretically, students can now mix and match academic and applied courses in six core subjects: English, Math, History, Science, Geography and French. The academic curriculum is described as theoretical and abstract, while the applied curriculum is intended to be “hands-on”, with “concrete examples and practical applications.”¹

But data from the Ministry of Education show that Ontario’s de-streaming may be in name only. The majority of students who take Grade 9 applied math take the majority of their core subjects in applied. Just 10% of students take only applied math and no other applied courses. Very few students transfer from applied to academic courses.²

In almost all cases, students in applied courses are in different classrooms, receive instruction from different teachers, and study a different curriculum than those in academic courses.

INTERNATIONAL RESEARCH CONSENSUS: STREAMING MAKES INEQUALITY WORSE

While dividing students into separate groups based on their ability or presumed destinations after high school, may seem like common sense, international evidence shows that sorting students early in high school based on academic achievement or career pathways can depress achievement in lower-performing students.

In fact, substantial evidence suggests that sorting students in this way tends to *reinforce* disadvantage faced by low-income and racialized groups, perpetuating inequalities over their lifetime.³

Data released in December 2013 from the Organisation for Economic Co-operation and Development (OECD) (based on international assessments of 15-year-olds) confirmed earlier findings—that dividing students, especially dividing them early, contributes to worse educational outcomes for those from low socio-economic backgrounds.⁴ This new data reinforces what the OECD advised in 2012, that education systems should “avoid early tracking, and defer student selection to upper secondary.”⁵ Finland, Spain and Poland have already done so.

The OECD's recommendation was based on evidence that the existence of streaming—and particularly, non-academic tracks—“fuels a vicious cycle in the expectations of teachers and students.” Based on large-scale international research, the OECD identified a number of factors in ‘lower-stream courses’ that have been shown to contribute to disproportionately lower outcomes:⁶

- Teachers may have lower expectations for some students, particularly disadvantaged and/or low-performing ones, and assign them slower-paced and more fragmented instruction;
- students, in turn, adjust their expectations and efforts, which results in even lower performance;
- students placed in lower-performance groups may experience a low-quality learning experience;
- students may suffer stigmatization and a decrease in self-esteem; and
- students do not benefit from the positive effects of being around more capable peers.

Strategies such as improving teaching or curriculum for ‘lower-track’ classes may lead to some improvements, but they do not address *all* of the above factors, particularly students’ motivation and the effect of peer groups.

Streaming “fuels a vicious cycle in the expectations of teachers and students.”

Organisation for Economic Co-operation and Development (OECD)

EQAO SCORES, GRADUATION RATES AND COLLEGE REGISTRATIONS: ARE FAMILIES GETTING ALL THE INFORMATION THEY NEED?

When choosing their courses for grade 9, students and their families get some information about differences between the programs, about prerequisites, and about pathways to postsecondary education and employment.

It is not clear that they get information about the outcomes in applied versus academic courses.

Outcomes for Ontario's students in applied courses are notably worse than those of students in academic courses:

- **Students in applied courses are less likely to graduate.** A 2012 Toronto DSB report showed that 88% of students who took academic mathematics in grade 9 went on to graduate from high school, compared to 59% of those in applied.⁷ Province-wide data from a 2010 report also shows a 28% gap in the graduation rate.⁸ (The province does not currently analyze graduation data disaggregated by course type.)
- **The majority of students in applied *do not* go on to college.** The most recent provincial data available shows only 21% of students who took applied mathematics in grade 9 registered for college out of high school (an additional 3% registered for university).⁹ More recent TDSB data shows 24% of students in the applied program registered for college (and an additional 11% registered for university).¹⁰
- **On Education Quality and Accountability Office (EQAO) tests, there is a 40% achievement gap between students in academic and applied courses.**¹¹
 - In grade 9, 84% of students in academic mathematics are at or above the provincial standard (a “B”); compared to 44% of students in applied.
 - 94% of students in academic English are successful the first time they write the Ontario Secondary School Literacy Test (OSSLT), compared to just 51% of students in applied.
 - Over the last five years, the OSSLT success rate for students in applied English has declined by 11 percentage points, from 62% to 51%.

- **Students who were successful on grades 3 and 6 EQAO tests are less likely to be successful in applied mathematics than in academic mathematics.**
 - In 2012, 21% of students in applied mathematics did not meet the provincial standard in grade 9, despite having successfully met the standard in grades 3 and 6, compared to 8% of academic students.
 - Of the students who did not meet the provincial standard in grade 3 or 6, 30% were successful in applied mathematics, compared to 47% in academic mathematics.¹²

MAKING THE APPLIED ‘CHOICE’: IT STARTS IN ELEMENTARY SCHOOL

The decision about course choices in grade 9 is made by students and parents, often based on a recommendation from a teacher or guidance counsellor. The final decision belongs to the family.

As one principal commented, “parents get the last word, so we recommend, but we don’t fight a parent’s decisions. We do give the high school a heads-up in some cases.”¹³

DIFFERENT FAMILIES, DIFFERENT CHOICES

Researchers from the United Kingdom have identified stark differences between families and how they make choices, based on their socio-economic status:

MIDDLE-CLASS FAMILIES **“embedded choosers”**

- They have extensive social capital (contacts, influence, personal support) that they mobilize to underpin educational choices.
- Choice is based on extensive and diverse sources of information, including formal and informal sources, and personal role models.
- Choice is long-term and often relates to vivid and extensive “imagined futures”—part of a coherent and planned life course.
- Parents are “strong framers” and active participants in choice.
- They have more hard information about courses and “hot” knowledge (first- or second-hand recommendations or warnings related to specific educational institutions, course options, etc.).

WORKING-CLASS, IMMIGRANT FAMILIES **“contingent choosers”**

- They may have high levels of encouragement and expectations within the family, but minimal social capital to underpin choice.
- They are often ‘first-time’ choosers, whose family have little or no experience with the education system.
- Educational choices are highly contingent on structural influences, chance, and circumstances. Choices are made with minimal information, usually from formal sources such as brochures and media images.
- Choice is short term and weakly linked to “imagined futures”—part of an incomplete or incoherent narrative.
- Parents are “onlookers” or “weak framers.”
- They tend to rely heavily on “cold” knowledge such as handouts and websites, and choose according to geographic proximity to home and costs.

Taken from Reay, D. & Ball, S. (2005). Degrees of Choice: Class, race, gender and higher education. Trentham Books.

Given the importance of the choice, it is vital that students and their families are able to make informed decisions, but there are wide variations between boards in how information about courses is provided, and there are no standard criteria for making recommendations about course choices.

There are also wide variations in parents’ knowledge of the school system, their access to information and capacity to make informed choices. (See “Different families, different choices” on previous page.)

MAIN SOURCE OF INFORMATION ABOUT APPLIED AND ACADEMIC COURSES	
Information nights	53%
Handouts	17%
One-to-one counselling	10%
Other	20%

More than half of elementary schools report that information nights are the main source of information for families. However, there is no evidence that all, or even the majority of parents, attend.

Some schools report that they use one-to-one counselling, and schools with guidance counsellors are twice as likely to provide this individualized information and guidance. But only 29% of elementary schools with grade 8 have guidance counsellors. In Northern Ontario, only 8% have guidance counsellors.

UNWRITTEN CRITERIA FOR APPLIED?

The province does not provide any formal selection criteria for recommending enrolment in applied or academic courses, and schools’ involvement in course selection varies widely across Ontario.

Two-thirds (67%) of schools with grade 8 report their school has criteria that they use to advise students and their families about whether to select applied or academic courses.

In many cases, the recommendation is left to the judgement of the homeroom teacher, but some schools make no recommendation.¹⁴ In some cases, the staff may meet as a team with the principal and homeroom, guidance, and special education teachers to decide on their recommendations for students’ placement. Many schools report receiving direction or advice from high schools.

“As part of our transition program, we go into elementary schools and teach applied and academic classes.”

Secondary School, Simcoe Muskoka CDSB

Some principals say their school considers traits such as “work ethic, home support, attitude to learning,”¹⁵ work habits, “success possibilities” or potential,¹⁶ “student drive” or motivation,¹⁷ and “student goals and interests”¹⁸ when making recommendations. They may also recommend that students enrol in applied courses if teachers think that “students find greater success with hands-on learning,”¹⁹ if “students have been struggling with the grade 8 program,”²⁰ or if “students are not independent and require a great deal of assistance over many topics.”²¹ Many principals cited students’ special education needs as a factor.²²

In the provincial guidelines, low marks are not described as one of the reasons for taking applied courses. But the majority of principals say that students’ academic performance is the most common factor taken into account in making recommendations. Many say they recommend students achieving a mark below a “B” (70%) take applied courses.²³ A large number of schools report using data from the EQAO assessments in grade 6 and diagnostic assessments to inform their recommendations.

Students' academic performance is the most common factor in making recommendations about course choices.

Many schools recommend students with marks below a "B" (70%) take applied courses.

The comments reflect significant efforts to support students' successful transitions to high school and ensure 'fit' in the courses students choose, but one elementary principal did say, "I worry that some of our students sell themselves short—one of our school-wide focuses is growth mindset [the idea that intelligence can be developed, and that hard work and persistence are as important as innate ability]—we believe this will increase the number of students taking academic courses successfully."²⁴

SECONDARY SCHOOLS: WORKING TO MAKE SURE STUDENTS ARE IN THE RIGHT COURSE

While students make the initial decision about course choices in elementary school, secondary school is a whole new environment. Many secondary principals report they take active steps to ensure students are 'in the right course'.

This year, 89% of secondary schools report they have initiatives to ensure students are in the appropriate course. Most of the initiatives focus on getting information to parents and to the feeder elementary schools so that students are making informed choices at the beginning of high school.

In addition, many schools have a built-in review process. Some schools have a formal review after students receive their first marks, and others have an annual review of students' achievement and course placements. A smaller number of schools have adopted diagnostic testing at the start of the year to assess students' abilities and identify any need for support.

We have been very good in placing new students in the academic and university stream when we believe that they have been improperly placed. Principal/vice principal and guidance counsellors review student registrations to ensure proper placements. Movement between levels is encouraged and highly supported.

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SUPPORTING FLEXIBILITY BETWEEN STREAMS

In some schools, principals have made structural changes, including scheduling each subject's applied, academic and locally developed courses in the same time block, so that students can transfer more easily between courses.

In schools with smaller student populations, or those facing declining enrolment, many principals raised concerns that this option is not available. Others identify barriers to mid-term transfer if classes are full.

A small number of schools reported "stacking" credits, or "de-streaming," by offering combined academic and applied classes, granting credits for either academic or applied based on how many expectations were met in either type of assignment.²⁵

This year we offered combined sections in some courses and have asked teachers to do diagnostics to determine the starting point for students, and work on the expectations for each student accordingly. We are confident that teachers can differentiate the learning according to the student's needs. The results at the end of the semester and feedback from teachers will determine where this has worked or not.

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ELIMINATING EARLY STREAMING HELPS BOOST POLAND'S ACHIEVEMENT

This year's results from the OECD's PISA tests have shone a spotlight on Poland, which has made impressive gains in achievement and equity in the last decade.

In that time, students' scores on the mathematics assessment increased dramatically, from a below-OECD-average score of 490 in 2003 to an above-OECD-average score of 518 in 2012. Poland is now slightly ahead of Ontario, which has moved from 530 to 514 in the same time period.

Moreover, Poland reduced the percentage of low-performing math students from 22% to 14% and increased that of high performers from 10% to 17% in a period of nine years.

There were major structural changes in education in 1999, which appear to have had a significant effect on these results:

- Poland extended the time all students were provided with the same curriculum and instruction by a year. Now, all students study a common curriculum for their core subjects until they are approximately 15 years old, and they are required to meet equal standards. Previously, students were streamed into either secondary or vocational schools after 8 years of primary school.
- The emphasis changed from dividing students based on their ability, to teaching all students together: in 2003, only 19% of students attended schools where principals reported that students were *not* placed in different groups for mathematics classes (either different classes, or groups within classes); in 2012, 43% of students were in schools where students were not divided.
- There were considerable investments in professional development for teachers, and a new approach to teacher appraisal—many teachers across Poland upgraded their levels of education and professional skills, especially in the early stages of the reform.
- Poland introduced a standardized national assessment at the end of primary, lower secondary and upper secondary school.

Sources: OECD, see note 9; Education Quality and Accountability Office. 2013. Programme for International Student Assessment 2012: Highlights of the Ontario Results., Taken from Reay, D. & Ball, S. (2005). Degrees of Choice: Class, race, gender and higher education. Trentham Books.

AN ALTERNATIVE TO STREAMING? HIGH EXPECTATIONS AND APPROPRIATE SUPPORT FOR ALL STUDENTS

The Limestone District School Board has undertaken a potentially groundbreaking pilot project that they hope will improve outcomes for all students. The board observed a significant achievement gap between students in applied courses and academic courses. According to Superintendent Norah Marsh, the board also flagged provincial data showing “many students in the applied courses weren’t accessing college.”

In 2011, staff at the Granite Ridge Education Centre (GREC), a small K-12 school outside Kingston, decided to put all grade 9 English students—whether they had chosen applied or academic English—in the same class, with the option of doing the work for either kind of credit. At the end of the year, they

found that student behavior had improved, and time on task had increased for all students. Some students who had started in applied were successful in getting the academic credit. With a strong focus on numeracy, GREC next decided to tackle grade 9 math.

In the fall of 2013, all grade 9 students were registered in academic math. Instead of the usual semestered course, math is being taught as a full-year course on alternate days.

Just under one-third of the class were identified as needing extra support to succeed in math (students could either self-identify or a teacher could recommend support). Those students were registered in Learning Strategies 9—a credit course offered on alternating days. In the Learning Strategies class,

“The best thing about the pilot is seeing ... students in grade 8 who said ‘I’m not good at math’ or ‘I hate math’ being successful—in academic math.”

*Heather Highet, Principal
Granite Ridge Education Centre*

students received extra math support and they were taught about the importance of developing a ‘growth mindset.’ Growth mindset emphasizes key learning skills and attitudes, including hard work and perseverance.

At the beginning of the pilot project, students were promised that they could switch to an applied credit when the new semester started if academic math proved to be too much of a challenge.

In January, every student decided to continue in academic.

According to Heather Highet, Principal at GREC, “The best thing about the pilot is seeing students’ confidence in their ability grow, and seeing them successful. Students in grade 8 who said ‘I’m not good at math’ or ‘I hate math’ are being successful—in academic math.”

For her, these changes reflect both high expectations for students and their ability to learn—as long as they have the right supports.

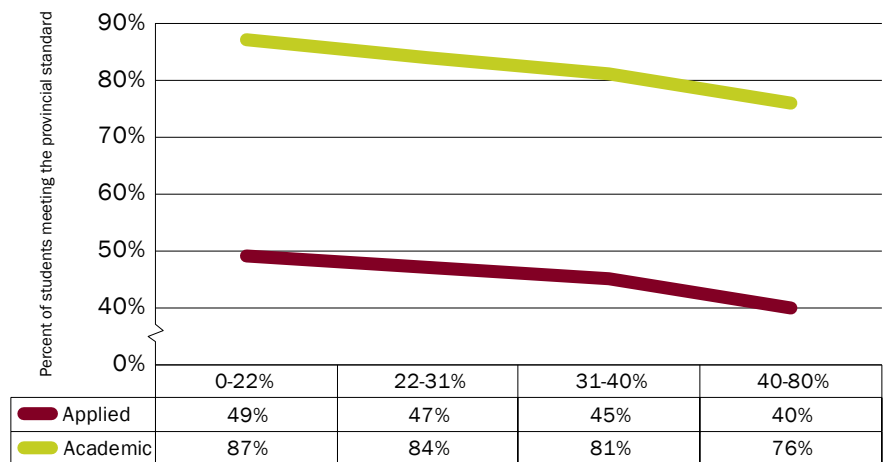
ONTARIO DATA: DOES CHOOSING APPLIED COURSES AGGRAVATE LOW ACHIEVEMENT?

One intuitive explanation for gaps in outcomes between applied and academic is a belief that students in applied are less academically capable, but People for Education’s analysis of EQAO achievement data for grade 9 mathematics shows that taking applied courses may actually aggravate low achievement.

Schools with higher proportions of applied students have lower achievement—both in applied courses *and* overall—than schools with a lower percentage of applied students. These findings highlight the importance of school environment and its effect on student achievement.

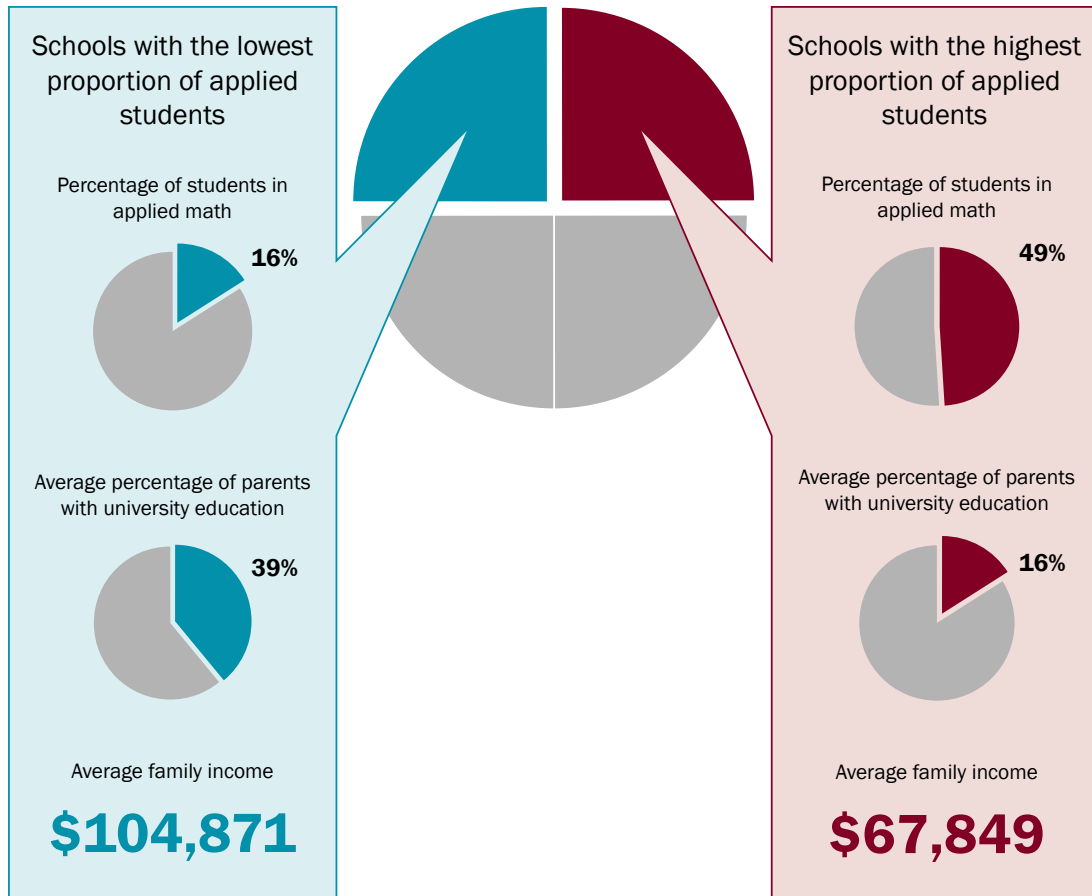
Even when controlled for average family income, there is a strong negative association between the level of applied enrolment in a school and academic achievement as measured by EQAO tests: that is, the higher the percentage of students in applied in a school, the lower the likelihood that students will meet or exceed the provincial standard.

Students meeting provincial standards in schools with high and low proportions of applied students



Quartile of schools by highest and lowest proportion of applied students

Characteristics of schools with low- and high-applied enrolment



STREAMING + SOCIAL SEGREGATION = INEQUALITY OF OPPORTUNITY

A key concern about streaming—particularly when linked to data on outcomes—is the significant demographic differences between students who are more likely to be enrolled in applied versus academic courses.

By international standards, Ontario has an equitable education system, but provincial data show that course choices continue to have an uneven effect on different communities. Aboriginal students, students with special education needs, and English Language Learners are overrepresented in the applied program.²⁶

Data from the Toronto DSB—one of the only boards that collects and analyzes data about race and ethnicity—show that black students are overrepresented in applied classes.²⁷

EQAO data also show striking differences between schools with high average family incomes and those with low average incomes.²⁸

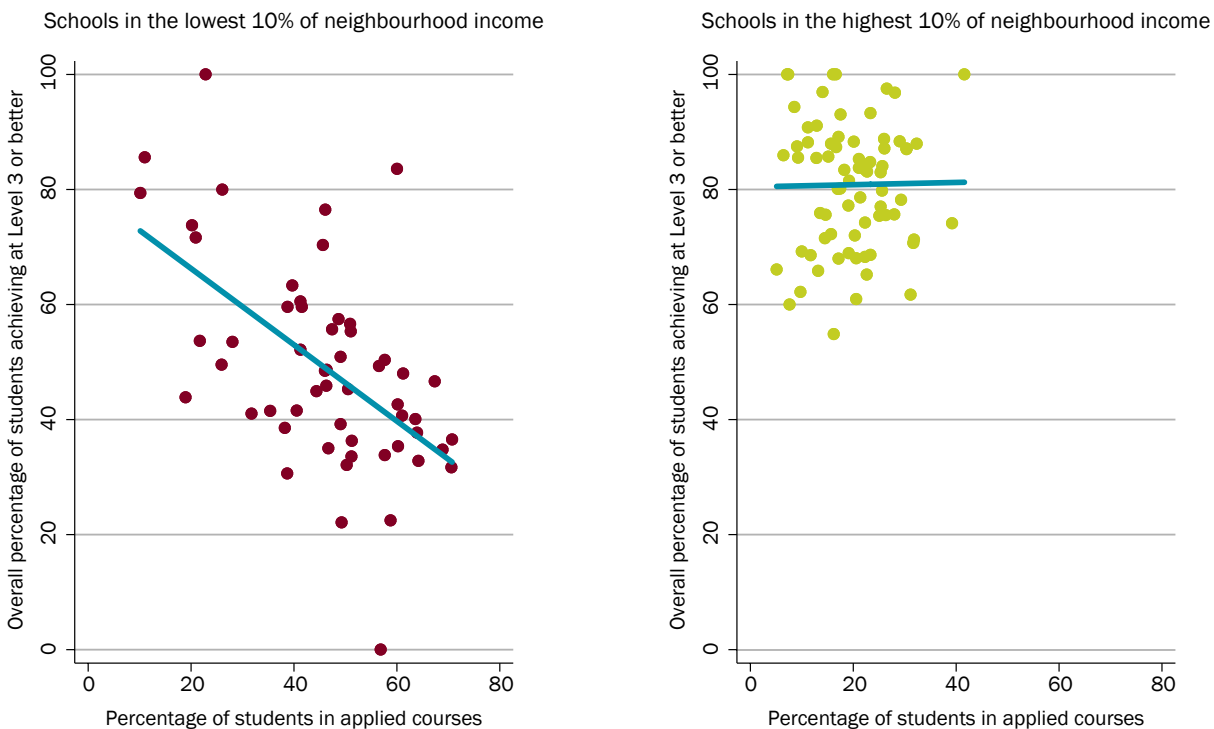
This difference is clearly evident when schools are grouped according to the percentage of students in applied mathematics:

- In the 25% of schools with the highest proportion of applied students, an average of 49% of students are in applied mathematics in grade 9.²⁹ In these schools, the average family income is \$67,849, and only 16% of parents have university-level education.
- In the 25% of schools with the lowest proportion of applied students, an average of 16% of students are in applied mathematics in grade 9. In these schools, the average family income is \$104,871, and 39% of parents have a university education.

In “low-income” schools, as the percentage of students in applied math increases, the percentage of students who are successful on grade 9 EQAO tests declines. On the other hand, in the “high-income” schools, the percentage of students in applied appears to have little or no impact on schools’ scores.

Education policy alone cannot overcome social inequality, but international evidence clearly shows that schools and school systems can moderate—or exacerbate—the effect of family background on student achievement and outcomes.³⁰

Percentage of students in applied courses and overall achievement in schools



In the above graphs, we can see a pattern in the relationship between the percentage of students in a school who are in applied courses (on the horizontal axis) and the percentage of all students in a school who are achieving at Level 3 or better (vertically). The first graph (left) shows schools in the poorest 10% of school neighbourhoods, while the graph on the right shows schools in the richest 10% of school neighbourhoods. There are approximately 80 schools in each group.

As the trend line in each of these graphs indicate, there are marked differences between patterns of applied enrolment and achievement in high-income and low-income schools. In low-income schools, the more students there are in applied programs, the worse the overall performance of students in the school.³⁶ In these schools, there is also a wide range in the percentage of students in the applied courses — from around 15 percent of all students to almost 80 percent.

In the graph on the right, however, the story is much different. In the higher-income schools, there is a much lower proportion of applied students (mostly clustered around 20% applied) and there is almost no association between the percentage of applied students and the overall school achievement.³⁷

ONCE APPLIED, ALWAYS APPLIED

According to Ministry policy, “when selecting their courses in Grades 9 and 10, students are *not* expected to make binding decisions about a particular educational or career pathway,” and in theory there are opportunities to transfer between applied and academic courses for students who “wish to change from one destination-related stream to another.”³¹

Nevertheless, People for Education data show that it is relatively uncommon for students to transfer from applied to academic courses. Only 2% of principals in secondary schools report that students “often” transfer between academic and applied courses; 48% say students “never” transfer, or “not very often”.

People for Education’s 2013 report, *The trouble with course choices in high school*, found that 34% of schools required students to take a transfer course to move from applied to academic in grade 10, but 81% of schools did not offer the course during school hours. Many principals felt the courses were ineffective, and many recommended re-taking the course at the academic level.³²

PERCEPTIONS OF APPLIED IN SCHOOLS

The Ministry of Education has been working on improving achievement in applied courses as part of their broader student success strategy, but applied courses appear to be assumed as a fact of life in most high schools.

In fact, many principals see applied as useful to students, particularly students who are struggling. As one principal explained, “a challenge is getting parents to accept that a student is better served in an applied program. All too often parents only come to the realization after the child has failed in academic.”³³

There were many comments which suggested principals consider the applied program a positive way to respond to differences among students. Although some principals acknowledged that there are negative perceptions of the applied

program—one principal expressed concern that “some students assume that the applied courses are just a ‘dumbed down’ version of academic courses”³⁴—many see applied as a respectful and dignified way to respond to students’ learning needs.

We are very intentional about talking about pathways and not levels. It's not a matter of going up or down. There is dignity in all pathways and there is always a way to achieve any destination. Each curriculum was developed with an intention in mind.

*Peterborough Victoria Northumberland
and Clarington CDSB*

Furthermore, many principals expressed the view that concerns about the applied program reflect a pro-university bias in families and broader society, or a failure to appreciate pathways such as college or apprenticeship.

Students and parents are often only interested in academic courses as they feel university is the only choice. There needs to be more information about other career and post-secondary options, not just in the schools.³⁵

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By providing and valuing multiple pathways through high school, Ontario has attempted to make the education system work for a wide range of students. But strongly-held attitudes about which students will be successful in which courses—alongside very real teaching and learning challenges—likely contribute to a policy focus on ‘fixing’ different parts of applied rather working to challenge early streaming.

CONCLUSION

Large-scale international studies show that dividing students in the early secondary grades tends to depress achievement for low-performing students, and has a disproportionate effect on students from disadvantaged backgrounds. These findings are borne out in data from Ontario.

The OECD recommends delaying selective programming until later in high school. When we look at the impact of restructuring the approach to streaming—particularly in Poland and the Limestone Board—it confirms that with sufficient support for both students and teachers, many students can succeed in academic courses in early high school.

It is time for Ontario to consider adopting OECD recommendations and move these important decisions to later in high school.

In the meantime, students as young as 13 years old and their families are forced to make choices that may have long-term implications on their chances for success in school and beyond.

RECOMMENDATIONS

As Ontario works to implement changes in its policies and programs for Ontario's youngest high school students, it is critical that students and their families get enough information to make informed decisions. In grade 8, every school should provide:

- up-to-date information about EQAO test outcomes for applied and academic students and the latest research about credit accumulation and graduation rates for students in different types of courses;
- information about all pathways through high school, including experiential, hands-on and theoretical education and the value of a range of skills and post-secondary goals, including university, college, apprenticeship and work;
- recent statistics that point to the likely post-secondary destinations of individuals who have chosen the academic and applied paths;
- clear information about the process involved in transferring between applied and academic courses; and
- information about the kinds of supports available to them if they choose to take academic courses in order to 'keep options open.'

It is also vital that boards and schools do more to keep track of the backgrounds of the students who are enrolled in applied and academic programs and, where there is evidence of disproportionately high numbers of disadvantaged students in applied courses, it should be a trigger for action.

METHODOLOGY

This year is People for Education's 13th annual survey of secondary schools. In October 2013, surveys were mailed to principals in every publicly funded secondary school in Ontario. Surveys could also be completed online. Translated surveys were sent to French-language schools. Reminders were emailed in November and December. Confidentiality of all survey responses is guaranteed. Only aggregated school data are shared.

Principals from 241 secondary schools, representing 26% of the province's high schools, responded to the 2013-2014 survey.

This year, the Education Quality and Accountability Office (EQAO) granted People for Education access to school-level

enrolment and achievement data for 708 high schools from across the province. The data included all students in grade 9 applied and academic courses, in addition to demographic data derived from Census Canada data (2006), analyzed by postal code. It does not include students taking Locally Developed Courses, as they do not participate in EQAO assessments.

We used this data to obtain the proportion of students enrolled in applied courses at the school level. Schools were ranked into quartiles on the basis of the proportion of students in applied. There are 177 schools in each quartile. We excluded any schools with fewer than 35 students in grade 9, and schools where more than 50% of students were identified as having special educational needs.

NOTES

- 1 Ministry of Education and Training. (1999). *Ontario secondary schools, grades 9-12: Program and diploma requirements, 1999*. Toronto: Queen's Printer for Ontario. Retrieved from <http://www.edu.gov.on.ca/eng/document/curricul/secondary/oss/oss.pdf>.
- 2 People for Education. (2013). *The trouble with course choices in high school*. Toronto: author.
- 3 See e.g., Jeannie Brooks. (1985) *Keeping Track: How schools structure inequality*. New Haven: Yale University Press; Hattie, J. (2009), *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*, Routledge, London; Hanushek, E. and L. Woessmann (2006), "Does Educational Tracking Affect Performance and Inequality? Differences-in-Differences Evidence across Countries." NBER Working Paper No. 11124, National Bureau of Economic Research. For Canadian research, see Curtis, B., Livingstone, D. W., & Smaller, H. (1992). *Stacking the deck: the streaming of working-class kids in Ontario schools*. Toronto: Our Schools Our Selves Educational Foundation; see also Krahn, H. and Taylor, A. (2007). "Streaming" in the 10th grade in four Canadian provinces in 2000. Statistics Canada Catalogue no. 81-004-XIE. Education Matters, 4 (2): 16-26.
- 4 Organisation for Economic Co-operation and Development (OECD). 2013. *PISA Results 2012: What makes schools successful*. Paris: Author, p.28.
- 5 Organisation for Economic Co-operation and Development (OECD). 2012. *Equity and quality in education: Supporting disadvantaged students and schools*. Paris: OECD Publishing, p.56.
- 6 Ibid, p.59.
- 7 Brown, R. and G. Parekh. (2012) Grade 9 Cohort 2006-2011, Fact Sheets 1-4, p.21, retrieved from <http://www.tdsb.on.ca/Portals/0/Community/Community%20Advisory%20committees/ICAC/research/Acrobat%20Document.pdf>.
- 8 King, Alan, et al. (2010). *Who doesn't go to post-secondary education?* Toronto: Colleges Ontario.
- 9 Ibid.
- 10 Brown and Parekh, see note 7.
- 11 Education Quality and Accountability Office. 2013. EQAO's Provincial secondary school report: Results of the Grade 9 Assessment of Mathematics and the Ontario Secondary School Literacy Test. Toronto: EQAO.
- 12 Education Quality and Accountability Office. (2012). An analysis of questionnaire and contextual data for Grade 9 students in the Academic and Applied Mathematics Courses. Toronto: EQAO. Retrieved from http://eqao.com/Research/pdf/E/Report_Longitudinal_Results_2013_en.pdf.
- 13 Lambton Kent DSB.

- 14 In some cases, elementary schools “do not recommend” a particular program of student, e.g. Thunder Bay CDSB, Ottawa-Carleton DSB.
- 15 Toronto DSB, and see Algoma DSB, Toronto Catholic DSB.
- 16 E.g., Greater Essex County DSB, Toronto DSB.
- 17 Rainbow DSB, York CDSB.
- 18 Lambton Kent DSB.
- 19 Waterloo Region DSB.
- 20 Durham DSB.
- 21 Simcoe County DSB.
- 22 E.g., Lambton Kent DSB, Greater Essex County DSB, Bluewater DSB, Toronto DSB, Toronto CDSB, Thames Valley DSB, Limestone DSB.
- 23 E.g., Brant Haldimand Norfolk CDSB, Toronto DSB, Huron Perth CDSB, Upper Grand DSB, Lambton Kent DSB.
- 24 Simcoe County DSB.
- 25 Toronto DSB, CS Viamonde.
- 26 See Government of Ontario. (2013) *A Solid Foundation: Second progress report on Ontario's First Nations, Métis and Inuit Framework*. Toronto: Government of Ontario, p.28; and People for Education. (2013) *First Nations, Métis and Inuit education: overcoming gaps in provincially funded schools*. Toronto: Government of Ontario; People for Education note 2; and People for Education. (2012) *Annual Report on Ontario's Publicly Funded Schools*. Toronto: Author.
- 27 Toronto District School Board, (2013) Programs of Study: An overview. Toronto: author.
- 28 “High income schools” are defined as the 10% of secondary schools in the province with the highest average family income. “Low income schools” are defined as the 10% of secondary schools in the province with the lowest family incomes.
- 29 N=177.
- 30 OECD (2012), *Equity and Quality in Education: Supporting Diasadvantaged Students and Schools*, OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/9789264130852-en>
- 31 Ontario Secondary Schools, Grades 9-12, see note 1.
- 32 People for Education, 2013 see note 2.
- 33 Halton DSB.
- 34 Upper Grand DSB.
- 35 See also CSDC du Nouvel-Ontario.
- 36 That is, there is a moderately strong negative association (correlation=-0.56) between the percentage of students in applied programs and the overall achievement of students in the schools.
- 37 The association between achievement and percentage applied is virtually nil (correlation =0.01).



People for Education is a registered charity that works to support public education in Ontario's English, French and Catholic schools.

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