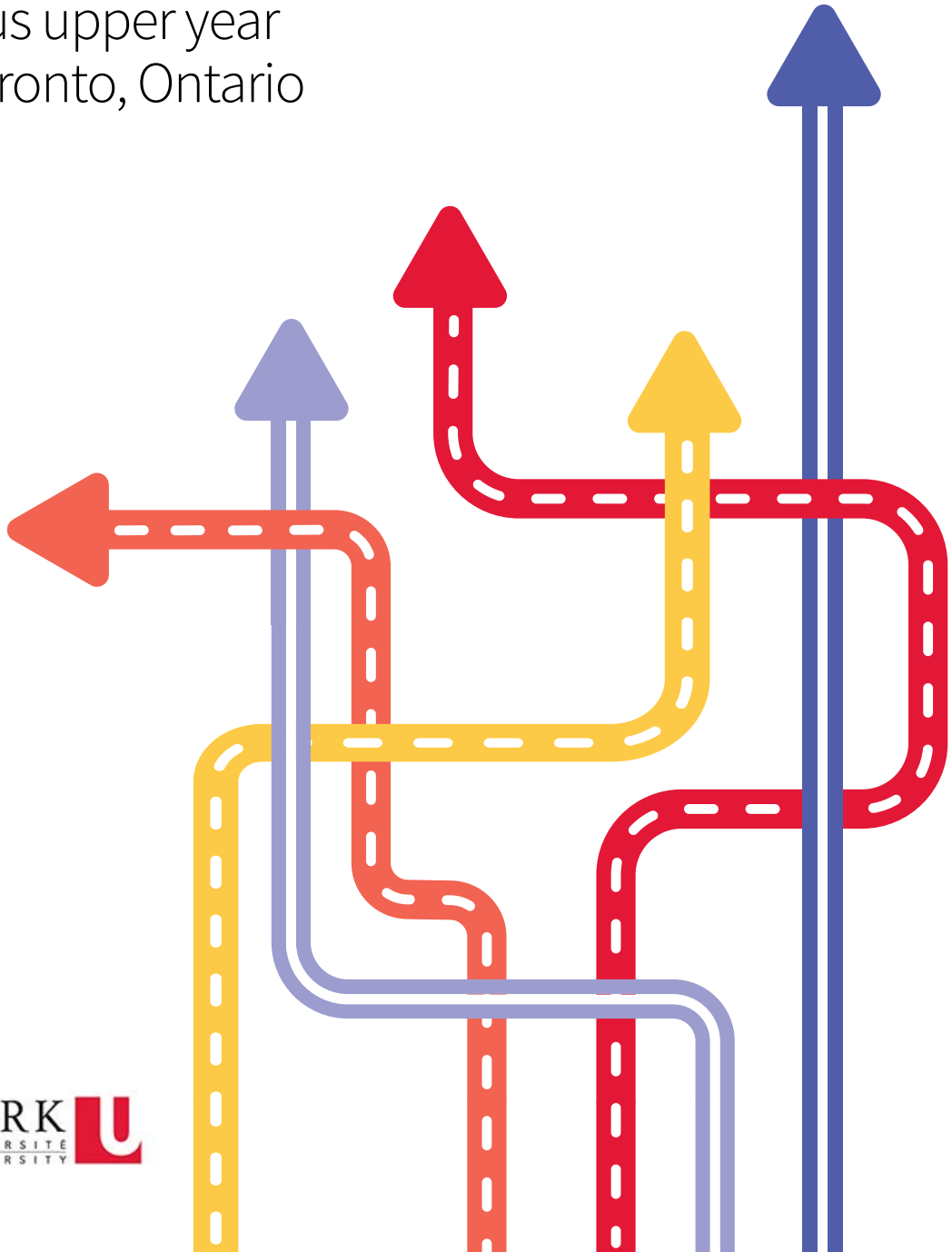
I have all my credits… now what?

Disparities in postsecondary transitions, invisible gatekeeping and inequitable access to rigorous upper year curriculum in Toronto, Ontario

March 2023



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Acknowledgments and Citation

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Executive Summary

"If educational attainment opens the door to a better life, then opportunities for educational attainment must be equally available to all students."[1]

High school graduates with disabilities, and from some racial groups, face substantial disparities relative to school board-wide averages in the rate to which they progress onto postsecondary – far greater than disparities in graduation. This report highlights between-group differences in the rates at which Toronto high school graduates gain access to postsecondary education, and examines the potential role of course choices in last two years of high school which contribute to uneven levels of postsecondary preparedness.

Disparities in postsecondary access after graduation

A far greater percentage of students graduate from high school than those who make direct transitions to postsecondary institutions. Marginalized group members are less likely to make that transition (recent Statistics Canada reports also highlight between-group differences (Statistics Canada, 2023)). Despite ostensibly having the same qualifications as their fellow students upon graduation, more than 20% of Latin American, White, Black and Mixed-race students who graduate from high school do not make a direct transition to postsecondary education (see figures 2a, 2b, 3a, 3b, 3c). The attainment of these groups compares unfavorably to a school board-wide average of 16%. An even more dramatic contrast is to East Asian students, of whom all but 9% of high school graduates proceed to postsecondary. Among students with disabilities who graduate, again, 23% do not make a direct transition.

Despite strong social and economic benefits associated with postsecondary education, in Ontario, government policy expresses no explicit preferences among 'pathways' for students to pursue at the end of high school: university, college, apprenticeship or workplace represent interchangeable versions of success. Students' postsecondary goals are characterized as 'personal', their pathways are 'individual', and the goal of the career planning program is that students make 'choices' about education and career/life (Ministry of Education, 2013). In the upper years of high school, students choose between 'University' ("U") and "College" ("C") courses in academically-focused subjects such as English, Math, or the sciences or social science courses.[2] Course credits of different types count equally towards high school graduation, but do not prepare students the same way for postsecondary education.

This report is based on longitudinal cohort data from the Toronto District School Board, disaggregated by race and special education needs, a proxy for disability. The data is taken from ten cohorts of TDSB students who started grade 9 between 2006-2015. Each cohort was followed for five years. There are 156,580 students in this dataset.

1 National Academies of Science and Medicine (U.S.). (2019). *Monitoring Educational Equity*. National Academies Press.

2 There are also Mixed, Open and Workplace courses but the focus of this paper is on University and College options in academic subjects.

In our analysis, *all* university-bound students, and two-thirds (65.3%) of college-bound graduates, completed at least one Grade 12 'U' course by the end of high school (see figure 4).[3] Of graduating students who did not complete *any* Grade 12 'U' courses (24.5% of TDSB students), fewer than a quarter (23.1%) made the transition to college; and 70.9% did not apply to postsecondary at all. Most students with one or two U courses were able to pursue college. Students with 4 or more 'U' courses generally transitioned directly to university.

Among the four- and five-year graduates who confirmed entry to university in Ontario within two years of finishing high school, 99.8% of them completed 12U English. Furthermore, a *majority* of students who confirmed entry to *college* in Ontario (53.0%) *also* completed 12U English (see figure 5a). 12U English clearly has a gatekeeping role for university, and, further, it is a meaningful asset for college admission. Only 70.8% of TDSB students completed grade 12 Math. The vast majority (87.2%) of those completed University Math (see figure 5b). Remarkably, 97.4% of students who completed at least one 12U Math course applied to postsecondary.

Significant differences by race and disability in postsecondary preparation

There are significant differences along the lines of race and disability in who takes the University courses that are so important for their preparation, access to and pursuit of postsecondary education.

For example, looking at the mandatory grade 12 English courses, Black and Latin American students are about twice as likely to be taking College English relative to the school board average of 14.6% (30.6% and 27.5%, respectively). Conversely, Black and Latin American students are notably *underrepresented* in 12U Math courses: 37.9% of Black students and 35.8% of Latin American students are enrolled in at least one 12U Math, while the board-wide average is 62.6% (see figure 6).

Students with disabilities are about half as likely as the TDSB average to be enrolled in 12UEnglish (see figure 7) – the course taken by almost every student who transitions to university, and the majority of those who go on to college.

Overall, students' academic achievement is a very strong predictor of both what types of courses they will take and whether they go on to postsecondary education. However, *when we control for prior achievement*, patterns of underrepresentation for key historically marginalized groups are starkly visible, at every level of achievement (see Figures 8A and 8B). For example, even among students with 'very high' grade 9 achievement [4] – a group that, overall, is 99.1% likely to go on to postsecondary, Black and Latin American students are less likely to go on to PSE (96.5% and 96.4%, respectively).

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3 When looking at the combined 2005-2012 cohorts, only 8% of postsecondary bound students- 7,188 of 84,899- had not completed at least one Grade 12 'U' courses. These students comprised a third of the Ontario college-bound students.

4 See full discussion in the main report on how we assess achievement. Students with "very high" grade 9 achievement have As in all four academic subjects and at least 8 credits.

For students with disabilities, disproportionately reduced access to these key opportunities is even more apparent (See figures 8B and 8C). Only 80.3% of students with disabilities who have 'very high' grade 9 achievement enroll in 12U English - compared to 99.6% of other students with a similar achievement profile.

Disparities get larger as student achievement levels go lower. For students with 'medium' achievement,[5] 'social capital' is likely to play a much larger role in the process of choosing, applying to and enrolling in postsecondary education (Ma, 1999; Nagaoka et al., 2009; Plank & Jordan, 2001; Schneider, 2007). That is, social factors beyond academic performance help shape students' decisions about, in the words of the Careers Curriculum, what post-secondary 'destination' will "suit their aspirations, skills, interests, values, and personal circumstances" (Ministry of Education 2013, p.16). For example, Black students with medium achievement are almost fifteen percent less likely to take 12U English than the TDSB average; and East Asian students *with comparable achievement* are almost ten percent *more* likely than TDSB average to access the rigorous curriculum that increases the chances they will go on to postsecondary.

Disparities get larger as student achievement levels go lower.

Systemic Discrimination?

The patterns documented in this report are highly suggestive of systemic discrimination, which is prohibited under Canadian human rights law. In the words of the Supreme Court of Canada, systemic discrimination:

> results from simple operation of established procedures … none of which is necessarily designed to promote discrimination. The discrimination is then reinforced by the very exclusion of the disadvantaged group because the exclusion fosters the belief, both within and outside the group, that the exclusion is the result of "natural" forces (*C.N. v. Canada (Action Travail des Femmes)*, 1987)

The systematic underrepresentation of some racialized groups and students with disabilities in the courses which play a key role in postsecondary access, even when we control for prior achievement, requires concerted and timely action.

The data for this report comes from only one of Ontario's 72 school boards, albeit the largest. Past findings from TDSB-specific on unequal outcomes research have been replicated in other boards; some boards have more limited research capacity. It is likely that the findings from this research have applicability beyond Toronto.

Recommendations

Current efforts to de-stream grade 9 will likely contribute to greater equity by ensuring students have appropriate prerequisites, but it is likely that other targeted efforts to change these patterns will be required to overcome the current discriminatory status quo. Change is required both in K-12 and in postsecondary institutions. Some of this change is underway. Based on internal research, the TDSB incorporated enrollment in U courses as a key metric in its Pandemic Recovery Strategy Update (Oct 2022). The Centre of Excellence for Black Student Achievement is leading urgent work on addressing racist and ableist structures, attitudes and practices across the system. At the same time, efforts to boost learning, engagement and achievement for all students remains a priority.

5 At least 8 credits, no As in the four academic subjects.

More specifically, we recommend:

- **The provincial government consider explicitly supporting a definition of student success that emphasizes postsecondary education, in light of evidence the current 'many pathways to success' approach has failed to set up historically marginalized students for equal chances of better lifetime outcomes.**

- **The provincial government ensures students, educators and families have clear and accurate information about short- and long-term outcomes associated with postsecondary pathways, including the postsecondary outcomes associated with course choices in the upper years of high school.**

- **The provincial government re-examine misleading names of 'College' and 'University' course types.**

- **The provincial government should routinely report publicly on rates of post-secondary access as well as graduation, with reports disaggregated by race, disability and other key identity characteristics.**

- **Given the considerable shortfalls with provincial government reporting on issues of equity even years after the Anti-Racism Act has been law in Ontario, we recommend serious consideration of moving responsibility for reporting on equity-related educational outcomes and opportunities outside of the Ministry in a model equivalent to the U.S. Office for Civil Rights.**

The report also includes a number of recommendations for future research and data collection, particularly in the area of pathways to apprenticeship.

Table of Contents

Introduction

Over the past 50-odd years, one of the most striking changes in Canadian education is the steady growth in rates of high school graduation and access to postsecondary education, including both college and university. In Toronto,[6] there has been an increase from a five-year graduation rate of 13% in 1967, to 56% in 1987 (Brown, 2010) to 86% in 2018. Alongside higher rates of graduation, there has also been a major increase in rates at which students are entering postsecondary education. In 2021, direct transition to postsecondary education was the majority pathway for TDSB students (Gallagher-Mackay & Brown, 2023)2023. Nonethless, significant disparities in access to postsecondary education remain for students who have historically experienced significant barriers to educational success, including students from low-income households, racialized students and students with disabilities (Robson et al., 2019).

Postsecondary education – across societies, and across Canada – is associated with a range of positive life and societal outcomes. Education is a key determinant of health, and those with more education live longer, healthier lives (Public Health Agency of Canada et al., 2008); it is also strongly associated with increased civic engagement (Turcotte, 2015). There are substantial earnings differences associated with access to and type of postsecondary education. For instance, in 2016, in Ontario, among adults between 25-64 working full-year and full time, the average earnings of university graduates were $70,832. College diploma holders earned $49,649; apprenticeship certificate holders earned $37,510, and those whose highest level of education was a high school diploma earned $44,928 (Statistics Canada, 2017a).[7] While recent research continues to underscore differences in postgraduate earnings based on graduates' race and gender (Galarneau et al., 2023), those with postsecondary education out-earn those without, across all groups.

The Government of Canada estimates that more than two-thirds of future jobs will require at least some postsecondary education (including vocational training/apprenticeships), a figure that rises to three-quarters of new jobs in fields where economic expansion is anticipated (Canadian Occupational Projection System, 2019). Those with lower education also face considerably greater difficulty transitioning between jobs and careers when required to do so -- a growing reality of the future economy (Bechichi et al., 2019). At the societal level, the skills and knowledge of a population directly impact labour productivity and innovation which in turn affect economic growth (Becker, 1993; Psacharopoulos, 2018; Schultz, 1961), and social inclusion (e.g., Schuller, 2001).

6 Figures up until 1998 for Toronto Board of Education (TBE). More recent data from the Toronto District School Board, an amalgamation of seven GTA boards, including the TBE. The TDSB enrolls approximately 70% of Toronto K-12 students.

7 No information was provided for those who did not finish high school, roughly fifteen percent of the population, and typically, a group characterized by a range of disadvantages.

After a review of evidence on postsecondary outcomes, the American National Academies of Science, Engineering and Medicine put forward the intuitive proposition in its consensus report on *Monitoring Education Equity*: "If educational attainment opens the door to a better life, then opportunities for educational attainment must be equally available to all students." (National Academies of Science Engineering and Medicine, 2019). Educational attainment in the twenty-first century *necessarily* includes preparation for, and ultimately, access to postsecondary education. Further, equity requires that these key opportunities be available without discrimination to all students.

This report uses data from the Toronto District School Board to examine equitable access to postsecondary education by looking at students' access to the secondary-level curriculum that prepares them for postsecondary, and the types of educational attainment the National Academies describe as a door to a better life for students. After setting out the relevant policy background, we will look at student *outcomes* in terms of patterns of educational attainment, measured by high school graduation and postsecondary access. The data will show that there are significantly greater disparities in the rates at which students are accessing postsecondary education than the rates at which they are graduating from high school. To understand that phenomenon, we will turn the focus of our inquiry from outcomes to *opportunities*, looking at evidence on whether some student course 'choices' adequately prepare them for postsecondary education. Having highlighted differences in the extent to which different types of courses prepare students for PSE, we will look at the demographics of enrollment in 'University-preparation' courses. We will look at overall patterns of enrollment for racialized and disabled students, and how significant disparities persist when we control for prior achievement. We conclude with implications for policy and recommendations.

Disability, Ableism, Special Education and Intersectionality: Theoretical framing and note on language

This report examines disparities in access to both key upper year secondary courses and postsecondary education. However, it is important to make explicit the premise that in the context of schools and education, access is typically highly related to students' perceived ability. Ableism, the privileging of ability, is at the root of how students are organized across pathways and are afforded different opportunities.

Abolitionist community lawyer, educator and organizer, Talila A. Lewis, offers a "working definition of ableism" that not only implicates education systems, but also draws important relationships between disability and anti-Black racism. Ableism is, as Lewis writes:

> A system of assigning value to people's bodies and minds based on societally constructed ideas of normalcy, productivity, desirability, intelligence, excellence, and fitness. These constructed ideas are deeply rooted in eugenics, anti-Blackness, misogyny, colonialism, imperialism, and capitalism. This systemic oppression that leads to people and society determining people's value based on their culture, age, language, appearance, religion, birth or living place, "health/wellness", and/or their ability to satisfactorily re/produce, "excel" and "behave." You do not have to be disabled to experience ableism (Lewis, 2022, para. 4).

Lewis' final point that non-disabled people can also experience ableism is critically important when it comes to finding an appropriate term to describe students involved in special education.

For years, the terminology of having "special education needs" or "special needs" appears to have been ushered into our language as a way to erase disability and protect children from disability-related discrimination. However, in disability studies, the term disability is often used to indicate the experience of disablement (Underwood, 2009). Underwood (2009) writes that "special education needs" has become a "catchall term for students who are traditionally identified with disabilities and for students who would otherwise not be considered to have a disability but who are having difficulty in schools." (Underwood, 2009, p. 4). In essence, the terminology is applied to all students who are failing to meet academic and social expectations in school. If disability is a social construct, Underwood continues, "The distinction between school-based disability and experiences of disability out of school are simply a matter of who is constructing the category of disability and how." (ibid).

Accordingly, in our report we will discuss students organized into special education as students with disabilities, because regardless of whether they have been formally identified through an IPRC process or are simply working from an Individual Education Plan, they are collectively "viewed as lacking the ability to perform the normative tasks expected in schools" (Underwood, 2009, 4). We acknowledge that the institutional data related to disability described in this report has been captured by the special education system and is not self-reported by students; where students are asked to self-identify, there are significant differences (Parekh & Brown, 2020).

Although the debate around language has been ongoing for some time, following consultation with members of the disability community, the National Centre for Disability and Journalism (2021) as well as the APA Style guide (2021) have recommended that the term "students with special needs" no longer be used as it is deemed offensive to many and euphemistic. The Ontario Human Rights Commission, in the Right to Read Inquiry Report, also uses the term students with disabilities to describe students receiving supports through the special education system.

At times, student data is organized by students' engagement with the Identification, Placement and Review Committee (IPRC) system (or not). As such, we will note the difference as students with disabilities (IPRC) as compared to students with disabilities (no IPRC).

Like pathways, special education is an ability-based organizational mechanism that exists in almost all publicly funded education systems. The IPRC is tasked with identifying students by categories of disability as well as determining special education placement. However, schools are obligated to accommodate and support students with disabilities, regardless of whether they have been formally screened through an IPRC. Due to its reliance on the assessment and perception of student ability and behaviour, special education decisions are particularly vulnerable to bias. For decades research has demonstrated the persistent over-representation of Black, Indigenous and Latin American, as well as low income and some immigrant youth in special education placements and identified with particular special education attributes (Brown et al., 2021a; Brown & Parekh, 2013; De Valenzuela et al., 2006; Domina et al., 2017; Erevelles et al., 2006; Ferri & Connor, 2005; James & Taylor, 2023; Losen & Orfield, 2002). Harkening back to Lewis' definition of ableism, the interrelation between racism, ableism, classism, colonialism and xenophobia are laid bare.

As such, analyses that draw on students' social identities in relation to their academic success in school must be understood through a lens of ableism and intersectionality.

Legal and Policy Context

Education is a provincial responsibility, and the provincial government sets the broad policy framework for education in Ontario, including funding, curriculum, and policy requirements. The provincial government establishes different course types in secondary school.

In the upper years of high school (grades 11 and 12) academically-focused courses, such as Math, English, Sciences, History, or Geography, are classified by students' presumed academic destinations into either University ('U') or 'College' ('C'), or Workplace preparation (W).[8] Some courses – including courses in Arts, Technology and Business – are classified as Mixed or Open, and are presumed to be relevant to all students (ie., these courses do not academically stream students). Mixed and Open courses are not the focus of this study because they are less frequently postsecondary pre-requisites. In terms of attaining an Ontario Secondary School Diploma (OSSD), upper year course types are equal in credit value – they all count the same way towards high school graduation.

The provincial *Education Strategy* (2020/21) calls for an education system that would "help all students reach their full potential, and succeed after high school, in postsecondary education, the skilled trades, their communities, and in the modern workforce" (*Published Plans and Annual Reports 2020-2021*, n.d.). Despite strong social and economic benefits associated with postsecondary education, in Ontario, government policy is explicitly neutral as to appropriate 'pathways' for students at the end of high school – university, college, apprenticeship or workplace. In the career development program, students' postsecondary goals are characterized as 'personal', their pathways are 'individual', and the goal of the careers program is that students make 'choices' about education and career/life, informed through a content-free inquiry process.[9] Core principles indicate that 'all students can be successful' and 'there are many pathways to success.' (Ministry of Education, 2013 pp. 8-9, 22-23)"

In the career development program, students' post-secondary goals are characterized as 'personal', their pathways are 'individual', and the goal of the careers program is that students make 'choices' about education and career/life, informed through a content-free inquiry process.

The mandatory grade 10 Careers Curriculum, invoking a travel agent metaphor common among guidance counselors, requires students to use a research process to identify and compare postsecondary 'destinations' to "suit their aspirations, skills, interests, values, and personal circumstances." They are also asked to consider course requirements that "lead to the destination" (p.16). Students are expected to identify trends that influence the world of work, and "analyze the possible impact of those trends on their own choices now and in the future" (p.22). An (optional) sample curriculum prompt for those trends is "growing demand for highly skilled workers who perform 'knowledge-intensive tasks' and for skilled tradespeople familiar with new technologies." The Careers program does *not* routinely include data about outcomes associated with different course choices; indeed, it is unlikely this information is widely available to guidance professionals, careers teachers

8 A very small proportion of students (approximately 1%, varying by course) take workplace courses. They are not a focus of this analysis.

9 The process focuses on four areas of knowledge: 'knowing yourself', 'exploring opportunities', 'making decisions and setting goals', and 'achieving goals and making transitions'.

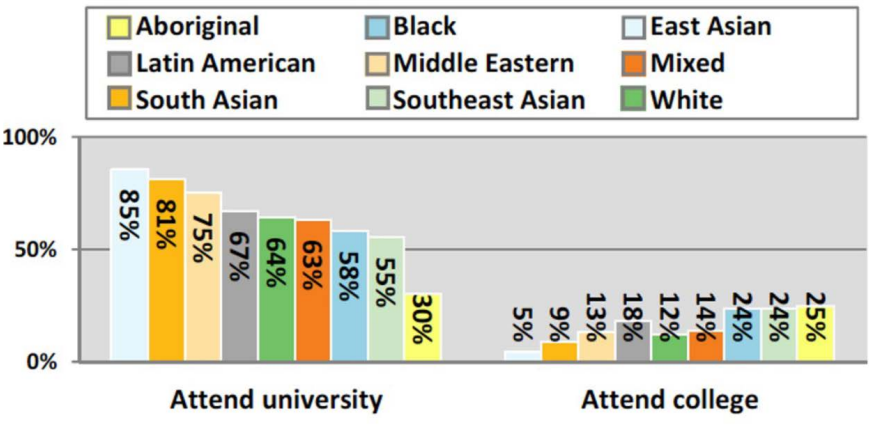
or high school educators more broadly. Interview data from guidance professionals suggest that they see the advice they provide being heavily shaped by the requirements of postsecondary institutions (Parekh et al., in preparation)

There are various explanations for the government's position that all postsecondary destinations represent comparable school success. The education system tends to be structured in a way that sees postsecondary outcomes as a matter of individual or family responsibility, and distinct from the more explicit public responsibility to support students towards graduation. Too much focus on postsecondary education may be seen as "elitist", devaluing learning and experiences associated with traditional practices, college, skilled trades or going straight to work (e.g., Smith et al., 2019). Educators may be uncomfortable suggesting how one destination leads to better life outcomes if some or most of their students may not be on track to pursue that option. Schools may see the job of ensuring access to postsecondary as the responsibility of postsecondary institutions rather than K-12. This perspective is supported by bureaucratic silos between the Ministry of Education and school boards, which overwhelmingly serve students in kindergarten to grade 12, versus the Ministry of Colleges and Universities and the Ministry of Labour, Training and Skills Development, which fund and regulate different forms of postsecondary education.

Notably, however, most parents are *not* neutral when it comes to their expectations of postsecondary education for their children. When asked in 2011-12 about these parental aspirations (see figure 1), the vast majority of TDSB students across racial and ethnic groups reported that their parents expect them to attend postsecondary education (Yau et al., 2015). However, there are significant between-group differences as to whether students reported that their parents expected them to go on to university or college. Those differences likely affected which courses students choose, particularly given the 'University'/'College' labels attached to upper year course choices (see below).

FIGURE 1

Parents' Postsecondary Expectations by Ethno-racial Background, Grades 9-12 (2011-12)



Source: Yau, M., Rosolen, L., & Archer, B. (2015). Parent Involvement, 2011-12 Student and Parent Census (Toronto District School Board Fact Sheets, p. 4).

Determinants of access to postsecondary education

There is a large international and Canadian literature on factors which shape students' access to postsecondary education. The structures and decision-making that underlie students' arrival in postsecondary are complex, and span students, families, schools, postsecondary institutions, immigration requirements and broader social structures, starting when children are very young and continuing through adolescence. No one factor fully 'explains' differential patterns of postsecondary access. Recent reports from Statistics Canada highlight relatively high rates of educational attainment for many racialized groups, while underscoring between-group differences and the significance of immigration as a contributor to Canada's relatively high and equitable rates of postsecondary attainment (Galarneau et al., 2023; Statistics Canada, 2023).

In Canada (and internationally), large scale statistical work on postsecondary access initially focused primarily on family-level and socio-economic factors such as parental education and family income (Christofides et al., n.d.; Finnie et al., 2011; Finnie, Mueller, et al., 2008; Finnie, Sweetman, et al., 2008; Parekh et al., 2020). However, there is a growing literature that also looks at factors such as race, culture, disability and Indigeneity drawing on both quantitative (Brown & Parekh, 2013; D. Childs et al., n.d.; Finnie, 2012; Frenette, 2011; James & Taylor, 2023; K. Robson et al., 2018, 2019; K. L. Robson et al., 2014) and qualitative approaches ((James, 2021; James & Taylor, 2023; Restoule et al., 2013). The availability and structure of financial assistance programs – from promoting family savings to loans to free tuition - can make a difference in students' ability to access postsecondary (Belley et al., 2011; Finnie & Laporte, 2007; Ford et al., 2020; James & Taylor, 2023). Postsecondary institutions have embraced a range of strategies that are intended to improve access, although the extent to which these strategies are embedded in core functions of universities varies (R. A. Childs et al., n.d.; Executive Office of the President (U.S.), 2014; James, 2021; James & Taylor 2023; K. L. Robson et al., n.d.). And there is substantial research on initiatives that target the high school years, from special programs inside and outside schools, targeted guidance interventions, and broader school culture work to support postsecondary access (Deller, 2018; Ford et al., 2016; Lavecchia et al., 2015; Roderick et al., 2011).

Within Ontario in recent years, there has been renewed emphasis on how structures in the K-12 system, particularly in high school, affect not just shorter-term achievement such as test scores and credit accumulation of students (Clandfield et al., 2014; James & Turner, 2017; People for Education, 2014) but also their long-term outcomes such as postsecondary access (Brown, 2010; Brown et al., 2021a; Card & Payne, 2015; Parekh et al., 2016; Pichette et al., 2020; K. Robson et al., 2019). To date the primary emphasis in this work has been on how students are streamed into Applied vs. Academic courses in grade 9. This research showed that applied courses actually depressed student achievement, taking prior academic achievement into account. It also documented the disproportionate representation of Black, disabled and low-income students in these programs, (ibid.). There has also been important academic research on how different types of special education placement shape students' educational opportunities and outcomes (James 2021; Parekh & Brown, 2019). Upper year course choices – between 'University' and "College" courses are heavily related to streaming in grades 9 and 10, because "academic" courses are often prerequisites for U courses in grade 11.

To date, however, there has been much less emphasis in Canadian research on the structures associated with the *upper years* of secondary schools, nor looking explicitly at the how different groups of students are prepared for postsecondary in terms of access to rigorous curriculum. This paper begins to fill this gap.

Equality guarantees under the *Charter of Rights* and *Ontario Human Rights Act*

Under the *Charter of Rights and Freedoms*, the provincial government has the obligation to ensure that its laws, policies and programs operate on a basis that ensures each individual benefits equally and without discrimination (s.15). There is an even more explicit obligation to ensure services including education are provided without discrimination under the *Ontario Human Rights Act*. Discrimination includes both direct, intentional acts, and equally importantly, systemic discrimination. According to the Supreme Court of Canada, systemic discrimination:

> results from the simple operation of established procedures … none of which is necessarily designed to promote discrimination. The discrimination is then reinforced by the very exclusion of the disadvantaged group because the exclusion fosters the belief, both within and outside the group, that the exclusion is the result of "natural" forces…. (C.N. v. Canada (Human Rights Tribunal) [1987] 1 SCR 1114, p.1139)

The Ontario Human Rights Commission, similarly, defines systemic discrimination as "patterns of behaviour, policies or practices that are part of the social or administrative structures of an organization, and which create or perpetuate a position of relative disadvantage for racialized persons." (Ontario Human Rights Commission, n.d.). Systemic discrimination, affecting historically marginalized groups, is prohibited under human rights legislation. There is an enforceable right on the part of those groups to have this discrimination addressed.

Disparities exist along many axes, including household income, parental education, and family structure, gender, sexual orientation and identification, Indigenous identity, and newcomer status, alongside race and disability. When analyzing – or imagining — the lived experiences of students, and their educational and social outcomes, it is essential to give attention to the intersectional nature of identities (Crenshaw, 1989), and the non-arbitrary ways in which identities, environments and policy factors fit together to shape students' opportunities (Mayor & Suarez, 2019).

For example, racialized students are far more likely to live in low-income households and neighbourhoods (Statistics Canada, 2021). Advanced statistical analysis, including regressions and hierarchical linear modeling, can highlight the way in which these multiple factors contributed to cumulative outcomes (e.g., K. Robson et al., 2018; Willms, 2002).

This report is an *initial* effort to highlight issues in postsecondary preparedness and access to rigorous coursework. To make it more manageable, we have chosen to focus first on race and disability, two aspects of identity which are both entitled to human rights protection (unlike, for example, poverty, parental education, or involvement in the child protection system which also shape student outcomes), which affect large numbers of students, and which are associated with lifelong disparities in earnings and opportunities. Future research, with appropriate community engagement, could fruitfully examine similar issues for Indigenous, LGBTQ and English Language Learner students, among others.

Equity and (In)Equality: Educational and Legal Discourses in conflict

In the legal field, the language of 'equality' is the key frame for antidiscrimination work. Findings of unequal treatment are the key to *enforceable* remedies under both the *Charter* and *Human Rights Codes* across Canada. Documentation of unequal outcomes based on comparisons between historically marginalized and dominant social *groups* is an essential first step of research into systemic discrimination (Ontario Human Rights Commission, 2005).

Yet many, if not most, educators are extremely suspicious of, even hostile to, the language of 'equality'. 'Equality' in educational discourses, mandates identical treatment, is associated with ignoring disparities in social contexts and colonial histories of segregation, residential schooling, enslavement of Indigenous and African peoples, and racist immigration policies. Further, it is assumed that 'equality', disregards educational and developmental differences between individual children. For example, in his recent book, *Equality or Equity*, American educational researcher Jeff Duncan-Andrade wrote:

> Equity and equality are *not* the same thing… To build an "equal" education system in a society with this kind of historical investment in radicalized inequality and persistent, contemporary disparities in the 'dignity, rank, and privileges' extended to people outside of the the dominant culture seems reasonable only in a nation that aims to uphold systems of in-equality.
>
> To give every child an equal education is not only dismissive of our historical and current forms of in-equality, it is also misaligned with common sense and a century's worth of theory and research in child development and education…(Duncan-Andrade, 2022, p. 4)

Equity – which he defines, based on the *Oxford English Dictionary*, as "what is fair or just", is not only a preferred approach but, he argues, actually requires "a hard pivot" away from a focus on equality in education (ibid, p.16-17).

While this may seem like an unbridgeable divide, within the legal community, there is a frequently-referenced distinction between *substantive equality* and *formal equality*. Formal equality tends to be associated with equal/identical treatment regardless of context (often described, especially in the U.S., as 'equal opportunity') and has been rejected in Canadian equality jurisprudence. Instead, the concept of substantive equality is at the root of legal protections. Substantive equality focuses on historical and structural disadvantage affecting groups, rather than merely referencing individual differences. In the words of the Supreme Court of Canada:

> Substantive equality, unlike formal equality, rejects the mere presence or absence of difference as an answer to differential treatment. It insists on going behind the facade of similarities and differences. It asks not only what characteristics the different treatment is predicated upon, but also asks whether those characteristics are relevant considerations under the circumstances. The focus of the inquiry is on the actual impact of the impugned law, taking full account of social, political, economic and historical factors concerning the group. The result may be to reveal differential treatment as discriminatory because of prejudicial impact or negative stereotyping. Or it may reveal that differential treatment is required in order to ameliorate the actual situation of the claimant group while substantive equality places a greater focus on equality of results or outcomes, including the need for compensatory measures to overcome barriers (*Withler v. Canada (Attorney General)* SCC 2011 12 para 61).

In many ways, the legal concept of *substantive equality* is consistent with the use of the term *equity* by social scientists and educators, in paying attention to the historical and social context in relation to differences that must be understood and addressed to overcome discrimination.

To further complicate matters, educators are suspicious of undue emphasis on 'outcomes', associating them with acontextual, accountability-based measures and school rankings; the language of 'opportunity to learn' is used to talk about system-level resources and processes required to students' academic success (Guiton & Oakes, 1995; National Academies of Sciences, Engineering, and Medicine, 2019). By contrast, in legal discourse, the language of equal opportunity tends to be associated with formal equality.

In this paper, we are using the concept of equity which which is very similar to the concept of substative equality used in legal discourse, and we reference the language of educational opportunities to talk about the necessary processes, resources and supports for educational equity.

Using outcome data to highlight systemic discrimination

From some equity perspectives, large scale data on disparities and disparities in educational outcomes is problematic, even painful, and can reinforce stereotypes, racial and colonial hierarchies or 'deficit' perspectives which locate educational problems in populations not structures (Eizadirad, 2020; Kendi, 2016; Quinn, 2020). At the same time, differences in postsecondary destination have real-world effects on life outcomes, and *not* discussing these disparities may leave unaddressed the underlying structures that lead to them.

Discussion of disparities in outcomes without context to focus inquiry on institutional drivers for any disparities, is particularly problematic. The Ontario Human Rights Commission is explicit in saying that data collection on race and disability "is necessary for effectively monitoring discrimination, identifying and removing systemic barriers, ameliorating historical disadvantage and promoting substantive equality" (Ontario Human Rights Commission, 2004, 2005). This analysis follows the guidance of the Human Rights Commission and discusses disparities – and even disparities – in postsecondary outcomes and preparation for different subgroups within the TDSB.

The National Academies of Science, Engineering and Medicine (U.S.), in its 2019 report, *Monitoring Educational Equity (National Academies of Science Engineering and Medicine, 2019)*, proposes a comprehensive framework for assessing the current state of equity within the education system. Like the Human Rights Commission, they argue that carefully-chosen indicators of educational inequity "highlight disparities, provide a way to explore potential causes, and point towards possible improvements." (p.1)

The National Academies' (2019) proposed set of indicators is relatively comprehensive and addresses the entire continuum of K-12 schooling. There are a number of interconnected indicators focused on the end of high school: graduation, postsecondary readiness, and access to rigorous curriculum. They argue that it is essential to track *both* graduation and postsecondary preparedness. In addition, they argue that a strong system for monitoring equity would also address access to rigorous curriculum:

> Advanced course taking in high school is a strong indicator of opportunity to learn because it reflects both systematic differences in the availability of these courses and in who participates in them. As such, improving access to high-quality advanced coursework across several disciplines represents a potential lever for reducing group disparities in educational attainment. (p.97)

In Ontario, at the provincial level, we do not have disaggregated data on postsecondary access, nor on access to rigorous curriculum. High school graduation continues to be the final major outcome tracked and publicly reported by the provincial government in Ontario (Ontario, n.d.), and there is no consistent demographic data collection or analysis

available provincially on either graduation or test-based achievement measured by the Educational Quality and Accountability Office (EQAO). Five years ago a major provincial report recommended public reporting on direct transition to university or college as one of the Ministry of Education's success indicators, alongside the development of infrastructure to track students' transition into apprenticeship and government-funded training programs (Quan & James, 2017, p. 12). The Truth and Reconciliation Commission also includes tracking and publicly reporting postsecondary access for Indigenous Students in one of its Calls to Action (Truth and Reconciliation Commission of Canada, 2015, p. 320). These recommendations have not been implemented. Indeed, the Ministry of Colleges and Universities systematically strips the limited student demographic data available in K-12 from student records which could be linked using the Ontario Education Number (Gallagher-Mackay, 2017, p. 20).

By contrast, at the local level, Toronto District School Board (TDSB) has a well-established record of tracking and analyzing relevant data and sharing results publicly and as a basis for action and improvement. The TDSB is the largest school board in Canada: it serves 247,000 students educated in almost 600 schools, including 110 high schools. The board, like the city it serves, is extremely diverse, with over 120 languages spoken. Due to decades of investment in research, the Board is a leader in educational research in Canada, and has pioneered the use of demographic data and cohort analysis for the purposes of better understanding its student body and their needs, pinpointing barriers and assessing progress towards goals including greater equity.

The data for this report comes from only one of Ontario's 72 school boards, albeit the largest. Past findings from TDSB-specific on unequal outcomes research have been replicated in other boards; other boards have more limited research capacity. It is likely that the findings from this research have applicability beyond Toronto.

The data in this report: longitudinal data on ten cohorts of TDSB students

The Toronto District School Board has publicly reported disaggregated data on postsecondary access since 1999. The purpose of this program of research is to better monitor and understand possible factors that affect students' achievment and progress. The consistent use of demographic data supports the board's equity strategy in helping to identify – as a first step towards addressing– possible discrimination. This is the first report to link data on equity of outcomes with data on equity of access to rigorous curriculum in the upper years of high school.

This report is based on data that follows 10 cohorts of TDSB students for five years, from the start of grade 9 through to postsecondary confirmation.[10] While Ontario secondary curriculum works on the assumption that students will finish in four years, in fact many continue into Year 5, so each cohort is followed for five full years. Thus, students who started in Grade 9 in Fall 2006 were followed until Fall 2011 (October 31, 2011), that is, after the conclusion of Year 5 secondary and the beginning of Year 6. This report is based on the ten cohorts of students who started grade 9 between 2006-2015. The most recent cohort, Grade 9 students who started secondary studies in Fall 2015 were followed until Fall 2020 (October 31, 2020). In total, there are 156,580 students in this data set, 131,441 of whom obtained thirty or more credits.

The purpose of this program of research is to better monitor and understand possible factors that affect students' achievment and progress. The consistent use of demographic data supports the board's equity strategy in helping to identify – as a first step towards addressing – possible discrimination.

The Grade 9 Cohort dataset combines demographic data from several cycles of the TDSB Student Census (2006, 2011, 2016) . The Student Census is a survey given to all secondary school students, that includes extensive demographic data including self-defined race, disability,[11] parental education, parental occupation, family structure, sexual orientation and, since 2016, gender identity. It is also linked to extensive administrative data including credit accumulation, grades, special education status (see below part X), English language learner identification, and graduation.

10 The term confirmation of university or confirmation of college is used by OCAS (the college admission system) and OUAC (Ontario University Admissions Centre) when students indicate an intention to register at a specific university or college in Ontario. It is the last stage of the postsecondary process for which a province-wide figure is easily available. Information about whether students actual register and attend their chosen institution is held at individual institutions, which makes tracking the progression from high school through to attendance and confirmation somewhat more challenging. A closely linked group of studies has been using Statscan's Post-Secondary Information System linked to TDSB data to follow students into their postsecondary institutions. See eg. (Brown et al., 2021b)

11 2006 & 2016 surveys

Through data agreements, board data is linked to data on postsecondary confirmations from the Ontario College Admissions Service (OCAS) and the Ontario University Admissions Centre (OUAC). Between them, OUAC and OCAS handle applications for more than 95% of TDSB students. The other students likely apply out of province or much later (Brown & Tam, 2016). Through these agreements, the TDSB has data for each student, on whether they applied to college or university in Ontario, and whether they confirmed acceptance.

As noted above, we have operationalized the concept of disability in this report using the imperfect proxy of special education status within the TDSB.[12] A fundamental insight of Critical Disability Studies is that the construction of disability – and its consequences – are connected to the social and institutional environment in which people operate. Institutional recognition is often at odds with self-identification (Parekh & Brown, 2020). In 2006 and 2016, but not 2011, the TDSB Student Census asked students if they were identified by teachers or a doctor as having a disability; less than a third of students involved in special education self-identified with a disability (ibid, p.358). Because of the gap in the Student Census with respect to disability, we do not have student-reported 'disability' data for all ten cohorts; however, we do have Special Education Status for all years.

12 We also note that, by design, the special education system in Ontario is simultaneously under- and over-inclusive with respect to disability. For example, gifted students, many without disabilities, receive services within the system; while many students with mental illnesses, a recognized ground for disability in Ontario Human Rights law, do not readily find support within it. Students have a right to special education services under the Education Act which is tied to special education processes, and, simultaneously, a human right to non-discrimination on the basis of disability that requires provision of adequate supports.

Disparities in Students' Access to Postsecondary Education

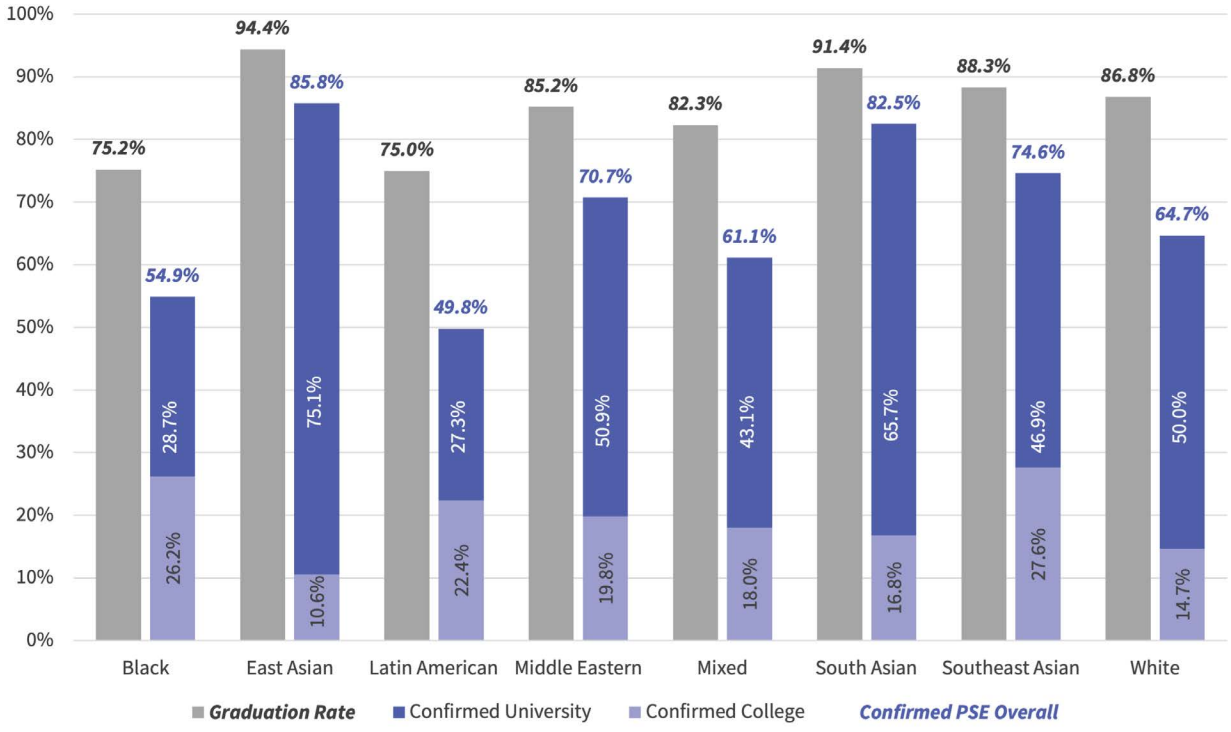
In Canada, like the United States, some of the most significant disparities in educational access and attainment for students who have been historically marginalized fall outside the K-12 system, with its free, universal coverage. Significantly larger disparities in participation are seen in both early education and care (because of high fees and limited subsidies) and postsecondary education (McCain, 2020; K. Robson et al., 2019). Data from the Toronto District School Board makes it clear that there are major, equity-related disparities in equity of access to postsecondary education. While between-group differences in high school graduation are a significant problem, disparities are much greater when it comes to postsecondary transition. As discussed above, there is considerable, intersectional interaction between different aspects of students' identities and the processes through which students engage in the education system. Essentially, neither race nor disability are 'singular factors' which operate in the way these figures may suggest.

Graduation vs. confirmation in a postsecondary institution: a steep increase in inequity

A far greater percentage of students are graduating from high school than making direct transitions to postsecondary education, and there are significant between- group differences in the type of postsecondary institution attended.

FIGURE 2A.

5 year graduation rate vs. postsecondary confirmation by self-defined racial identity, 2006-2015 cohorts, n=139,860

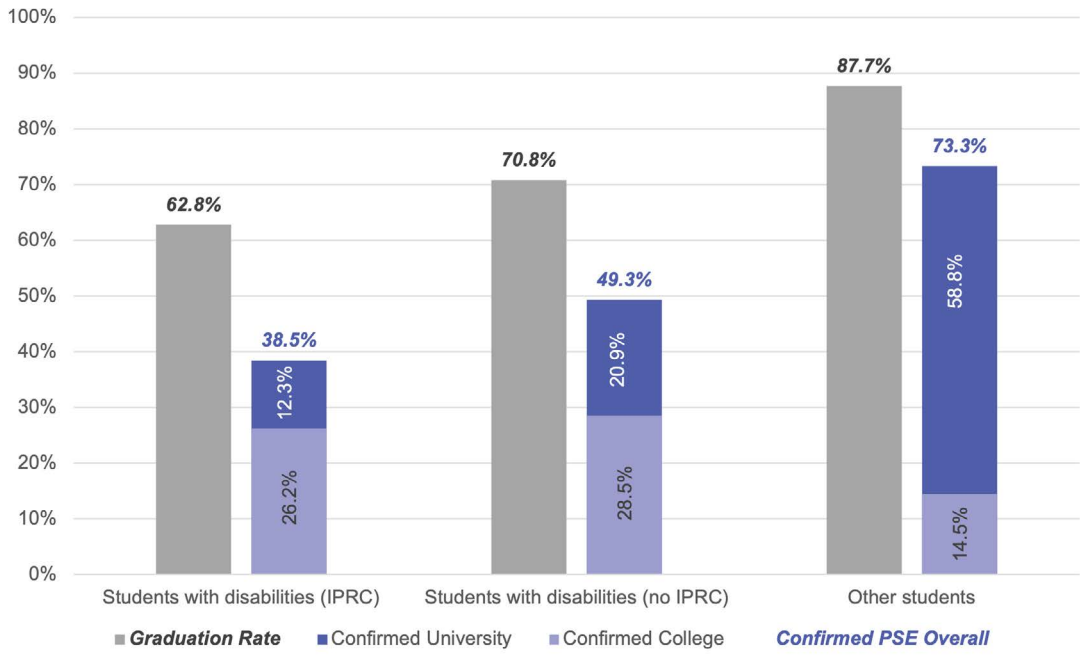


For example, in figure 2a, if we compare Latin American students and East Asian students (the groups with the lowest and highest attainment, respectively) we see that 75.0% of Latin American students graduated while 49.7% of them went on to postsecondary; among East Asian students, 94.4% graduated and 85.7% went on to university. The graduation gap between these groups is 19.4% (the largest). However, the postsecondary access gap is 36% - almost double.

A similar pattern is clear for students with disabilities (see figure 2b). Among students with IPRC-identified disabilities, the five-year graduation rate is 62.8%; the rate at which students go on to college or university is 38.5%. For non-disabled students, the graduation rate is 87.7%, and 73.3% go on to access PSE. The differences in graduation were substantial: 24.9%; however, the disparity in access to postsecondary is even larger at 34.8%.

FIGURE 2B.

5 year graduation rate vs. postsecondary confirmation among students with disabilities (IPRC and no IPRC) and other students, 2006-2015 cohorts, n=156,789



An important equity goal: reducing postsecondary transition disparities?

Based on the differences observed above, it appears that a readily understandable measure of equity in educational attainment, with strong real-world consequences, would be between-group disparities in the transition between high school graduation and postsecondary.

Despite ostensibly having the same qualifications as their fellow students upon graduation, more than twenty percent of Latin American, White, Black and Mixed-race students who graduate from high school do not make a direct transition to postsecondary (see figure 3a). The attainment of these groups compares unfavourably to a board-wide average of 16%, and to the highest-achieving groups of whom all but 9% transition directly to postsecondary.

FIGURE 3A.

Difference between 5 year graduation rate and PSE access by racial identity, 2006-15 cohorts, n=139,860

Similarly, when we look at students participating in special education (see figure 3b), there are significant differences in terms of access to postsecondary.

FIGURE 3B

Difference between 5 year graduation rate and PSE access among students with disabilities and other students, 2006-15 cohorts, n=156,789

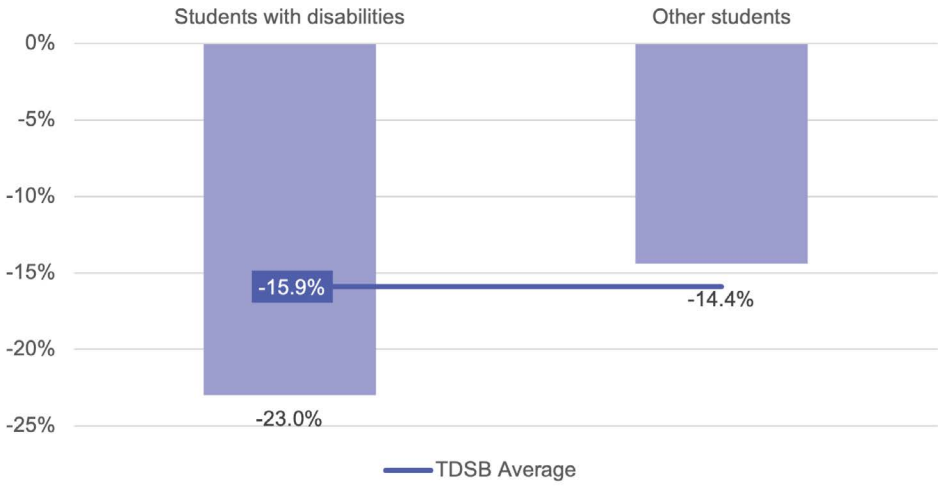
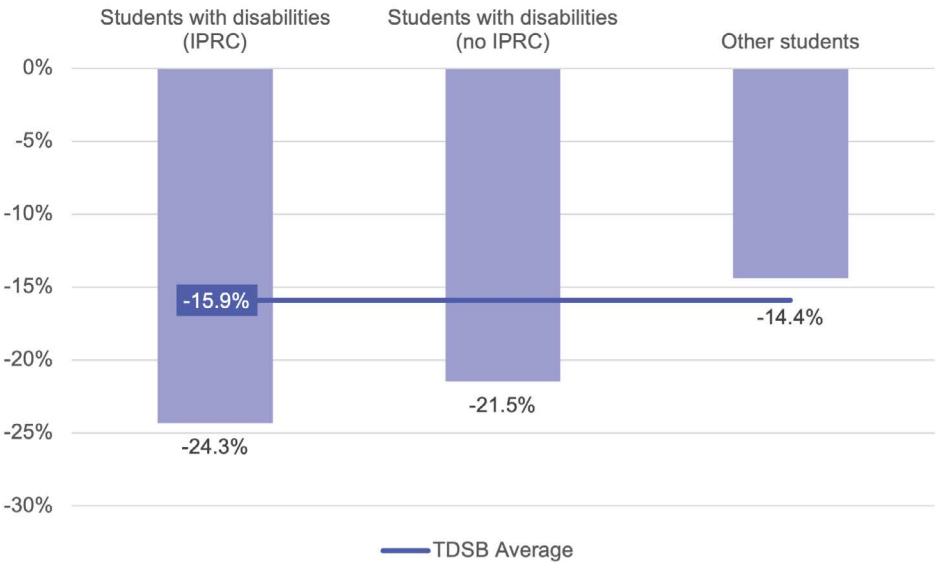


FIGURE 3C

Difference between 5 year graduation rate and PSE access among students with disabilities (IPRC & no IPRC) and other students, 2006-15 cohorts, n=156,789



Disparities in access to postsecondary education far exceed disparities in graduation. This suggests that the major current measure of educational success in the K-12 sector – high school graduation – significantly understates inequities which have long-term implications for individuals, groups and society as a whole.

The major current measure of educational success in the K-12 sector – high school graduation – significantly understates inequities which have long-term implications for individuals, groups and society as a whole.

If the primary focus of K-12 – the focus for which there is explicit institutional responsibility – is getting students to graduation, then preparing them for a full range of opportunities after graduation may fall lower on educators' priority list. A measure of disparities in postsecondary transition is a step towards joined-up policy, as responsibility for reducing it falls on both the Ministry of Education and the Ministry of Colleges and Universities (and, the Ministry of Labour, Training and Skill Development if apprenticeship is properly taken into account).

Outcomes and pathways to apprenticeship

Apprenticeship is identified in Ontario policy as an important postsecondary pathway, yet relatively little is known about patterns of enrollment in apprenticeship programs.

There is no systemwide data on the number of students who progress from high school to apprenticeship programs each year. Across Ontario, we know that most apprentices do not progress directly from high school into the skilled trades. In fact, data from the National Apprenticeship Survey shows that only 29% of apprentices in the top-ten fields were attending school (not a defined term; and not necessarily secondary school) before they entered the apprenticeship programs; fully 32% of apprentices had a postsecondary credential (Chatoor & Brumwell, 2020).

As a group, apprentices are likelier to come from low-income families, to be part of the first generation in their family to attend postsecondary, to be male (except in the much-less lucrative service trades) and to be white compared to those going to college or university (Chatoor & Kaufman, 2020, p. 15,21; Statistics Canada, 2017b).

While most apprenticeships require students to have completed a high school diploma and math or science courses (ibid., p. 5), information on the specific prerequisites for different programs is very difficult to locate and not centrally available to guidance counselors or prospective tradespeople (see e.g. the provincial government's webpage on how to start an apprenticeship, which tells students they need to know about prerequisites but does not provide any links to inform them about what they are). The key challenge reported by those who are enrolled in apprenticeship programs is finding work at the beginning of the training: approximately one third of enrollees reported this difficulty. There is no data on those who were not hired. Decisions about whether to take on an apprentice rest with the employer or union; both are subject to *Human Rights Code* obligations of non-discrimination, but equity data is not tracked.

Looking at the overall demographics for apprentices (especially if we exclude the hairstyling and food service trades with below poverty-line annual incomes), it is highly likely that if we had the data to report on direct transition to apprenticeship after high school, the postsecondary education transition disparities recorded here would be substantially smaller for both males and for white students.

Access to rigorous curriculum and opportunity to learn

A key structural factor which likely underlies differences in students' patterns of access to postsecondary is the extent to which students have access to rigorous curriculum in the upper years of high school.

There is a longstanding body of literature that has proven that different levels of access to rigorous curriculum contributes to inequitable educational outcomes along the lines of race and socio-economic status (Gamoran, 1987; Gamoran & Mare, 1989; Oakes, 1985), and clear research showing disabled students are less likely to have access to rigorous or grade-level instruction (Kurz et al., 2014; Parekh & Brown, 2019). In its review of key educational opportunity measures, the U.S. National Academy of Sciences concluded that "improving access to high-quality advanced coursework across several disciplines represents a potential lever for reducing group disparities in educational attainment" (National Academies of Science Engineering and Medicine, 2019, p. 97). Their research highlighted the large number of U.S. schools – and the disproportionate numbers of schools with high percentages of Black and Latin American students – that do not offer upper year STEM courses, such as Calculus (40% overall, and 55% of schools in the top quintile of "high minority" enrollment) or chemistry (33%, and 42% of schools in the top quintile of "high minority" enrollment). While this question is beyond the scope of our current analysis, in the Toronto District School Board, almost every secondary school offers university level English, Science and Math courses at the grade 12U level.

However, different groups of students access 'College' and 'University' courses at very different rates, and as we will see below, in particular, some groups of racialized and disabled youth are considerably less likely to be enrolled in University ("U") courses. These differences are particularly significant in light of the different outcomes associated with upper-year high school course types. In the next section, we will review the connection between upper year course types and postsecondary pathways.

At least some 'University' courses a practical pre-requisite for postsecondary

While course type is irrelevant for high school graduation, completing at least *one or two* Grade 12 'U' courses appears to be the general course requirement leading to postsecondary, whether university or college is the planned destination.

In our dataset,[13] we found that *all* university-bound students, and two thirds (65.3%) of college-bound students, completed at least one Grade 12 'U' course by the end of secondary (see figure 4).[14] **Of graduating students who did not complete any**

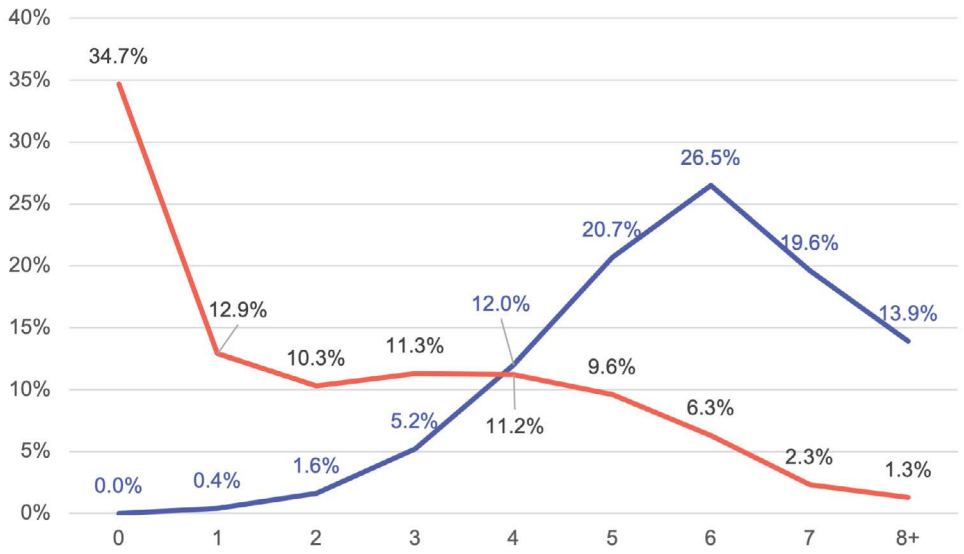
13 Calculated for the 2006-2012 Grade 9 cohorts (n=112,961). Information on the number of Grade 12 U courses completed for the 2013-2015 cohorts is currently unavailable.

14 When looking at the combined 2005-2012 cohorts, only 8% of postsecondary bound students- 7,188 of 84,899- had not completed at least one Grade 12 'U' courses. These students comprised a third of the Ontario college-bound students.

Grade 12 'U' courses (24.5% of TDSB students), fewer than a quarter (23.1%) made the transition to college; 70.9% did not apply to postsecondary. Most students with one or two U courses confirmed college attendance. Students with 4 or more 'U' courses generally transitioned directly to university (Parekh et al., 2021).

FIGURE 4.

Number of completed Grade 12 'U' courses and postsecondary confirmations, 2006-2012 (n=112,961)



Are some courses 'invisible gatekeepers' for postsecondary education?

In order to be eligible for an Ontario Secondary School Diploma, students are required to take a minimum of 30 credits. Among the 18 mandatory credits, students are required to take 4 English credits ('one per grade') and at least three Math credits including one in grade 11 or 12. English and Math, like other academic subjects, are offered at the College ('C'), University ('U') or Workplace level in grade 11 and 12 (Ministry of Education, 2016, p. 61). As discussed above, students receive information about course choices from the Grade 10 Careers course and can often access personalized guidance on prerequisites from teachers, guidance counsellors or education software. Typically, secondary educators and guidance counsellors take into consideration students' aspirations for postsecondary education in conjunction with formal requirements set by postsecondary institutions.

We have chosen to focus this analysis on two courses which show a strong relationship to postsecondary confirmations, English and Math. For this analysis, we are looking only at students who completed at least 30 credits and or have a record of completing the Ontario Secondary School Diploma.

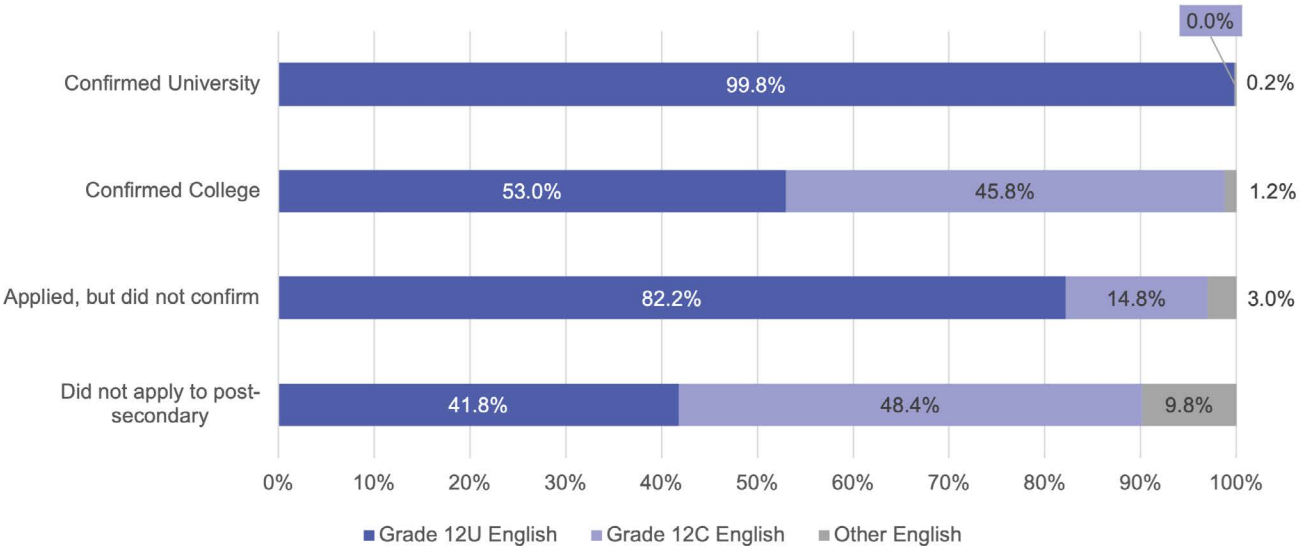
The vast majority (83.3%) of students' 'highest earned English credit'[15] is a grade 12 University English. Among the four- and five-year graduates who confirmed university attendance in Ontario within two years of finishing high school, 99.8% of them completed 12U English

15 This term refers to the level of course taken, not students' grades.

(usually, an explicit prerequisite). More notably, a majority of students who confirmed college in Ontario (53.0%) *also* completed 12U English. Seemingly, 12U English not only has a gatekeeping role for university, it appears to be an important asset for college admission.

FIGURE 5A.

Relationship between highest English course taken and postsecondary destination, 2006-2015 cohorts n=131,441

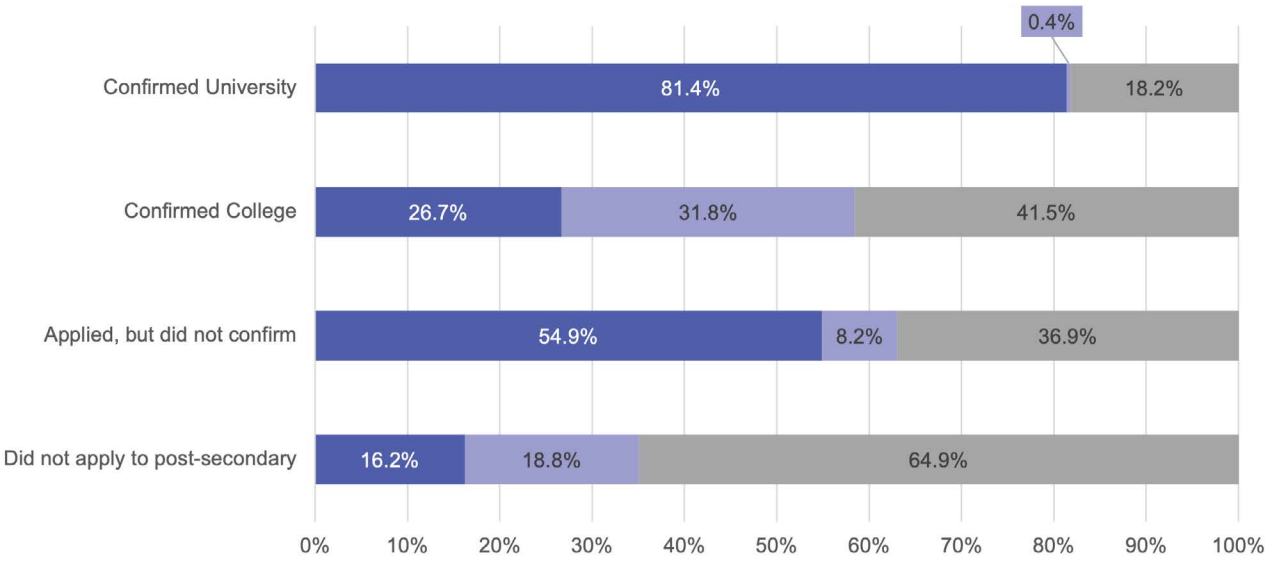


The picture for Mathematics is somewhat different because students are not *required* to take grade 12 Math at either College or University levels. Only 70.8% of TDSB students completed grade 12 Math; the vast majority of them (87.2%) completed University Math. Remarkably, 97.4% of students who take at least one 12U Math course apply to postsecondary.

To look at the question in another way, among those who confirmed university in Ontario, 81.4% of students had a grade 12U Math as their highest credit; only 0.4% had grade 12C Math. Among those who confirm college directly after high school, 41.5% did not take *any* Math in grade 12. A quarter of graduates (26.7%) confirming college in Ontario had grade 12 U Math as their highest credit, and another 31.8% completed college Math.

FIGURE 5B.

Relationship between highest Math course taken and postsecondary destination, 2006-2015 cohorts n=131,441



College outcomes of "College" courses: Ontario research

Research from the college sector also indicates significant concerns about the level of postsecondary preparation provided by 'College' classes in high school. Notably, a large-scale study, based on the records of students taking first year mathematics at the 24 Ontario Colleges of Applied Arts and Technology, highlighted concerns about the level of preparation for success in these courses. First year math courses are required in many Business, Technology, Applied Arts and General Programs. Just over half of students who had completed 'College' mathematics in grades 11 or 12 received 'good grades' (C or better) in their required College Mathematics courses (Orpwood & Schollen, 2010, pp. 6, 11). Approximately 80% of students entering college either grade 11U or 12U courses achieved 'good grades'.[16]

Racial differences in enrollment in 'gatekeeping' courses

There are significant differences across racial groups in terms of which students enrol in 12U English and U Math courses; these differences correlate heavily with students' postsecondary outcomes.

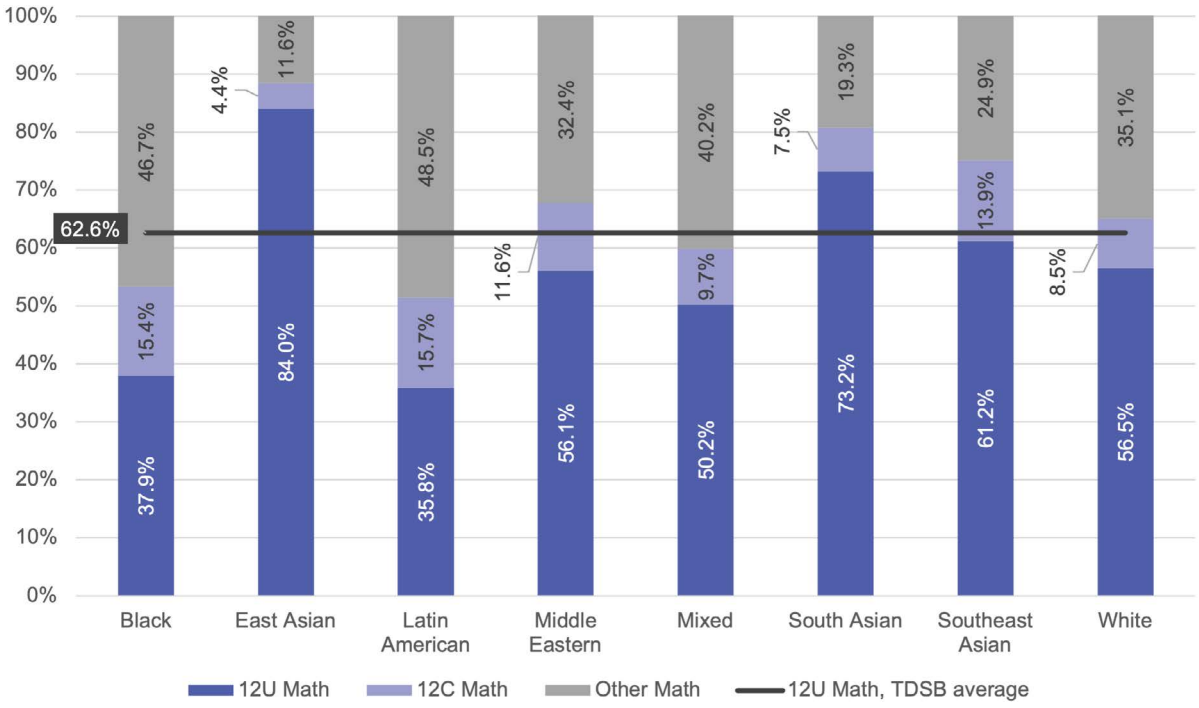
For example, looking at the mandatory grade 12 English courses, Black and Latin American students are almost twice as likely to be taking College English relative to the board-wide average of 14.6% (30.6% and 27.5%, respectively). Conversely, Black and Latin American students are seriously *underrepresented* in 12U Math courses: 37.9% of Black students and 35.8% of Latin American students are enrolled in at least one 12U Math, while the board-wide average is 62.6%. Although the differences are less dramatic, other groups

16 The methodology of the College Mathematics Project report is different from ours, so it is difficult to tell whether grade 11 marks reflect the highest credit achieved.

with lower rates of postsecondary access (White and Southeast Asian students) are also underrepresented in 12U Math and English. As established elsewhere, 12U Math is a very important gatekeeping course for all university programs connected any STEM programs (Brown et al., 2019), and contributes to significantly higher success in required courses for many college programs (Orpwood & Schollen, 2010).

FIGURE 6.

Highest Math Credit obtained, by race; 2006-2015 cohorts (n=121,674)



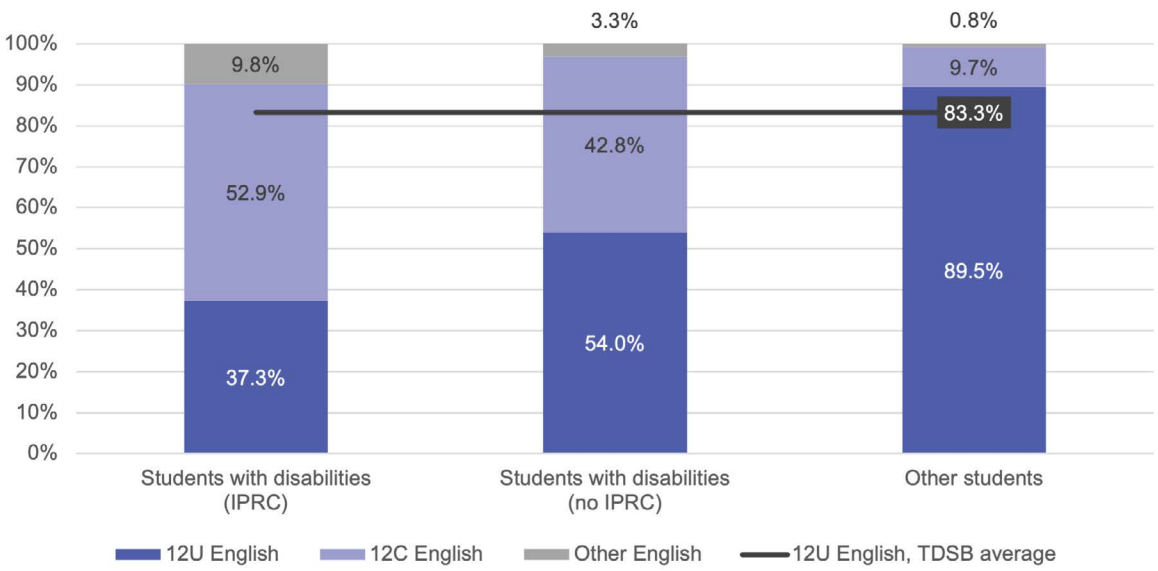
Students with disabilities are underrepresented in the 'gatekeeping' courses

Students with disabilities are notably underrepresented in both 12U English and 12UMath. For instance, students with disabilities are more than twice as likely as TDSB average *not* to take grade 12 Math at all. When students with disabilities do take grade 12 Math, they are heavily overrepresented in College Math. Students with disabilities (IPRC) are less likely to take 12U Math compared students with disabilities (no IPRC; 19.9% vs. 29.4%) and students with disabilities, overall, are less likely to take 12U Math than other TDSB students, 67.9% of whom take 12U Math.

Looking at Grade 12 English, a mandatory credit, we see even higher levels of overrepresentation in College courses. Students with disabilities are about half as likely as the average TDSB student to be enrolled in 12UEnglish, the course taken by almost every student who transitions to university, and the majority of students who go on to college. (Roughly 10% of students with disabilities (IPRC) are enrolled in 'other English' courses, typically, specialized workforce-oriented courses.).

FIGURE 7.

Highest English Credit Obtained, among students with disabilities and other students, 2006-2015 cohorts n=131,442



Thus far, we've seen that there are substantial disparities in PSE access along the lines of race and disability for students moving into postsecondary, which are greater than disparities in graduation; we have highlighted the 'invisible gatekeeping' role of certain 'University' courses in terms of admission to both college and university, and we have highlighted the fact that there are very clear disparities in the patterns of enrollment in those courses, along lines of race and disability. These disparities in access mirror the patterns we observed, above.

A skeptic might ask, do these disparities merely reflect higher levels of academic achievement among some groups?

Predictors of Upper Year Course-taking Patterns – the Role of Prior Achievement

Unsurprisingly, an extremely important predictor of whether students will take University courses in the upper years of high school is their record of achievement. Although it is not the only relevant factor, there is no doubt that students with better academic records are much more likely to go on to postsecondary. Other research has described student achievement as the 'most important' predictor of students' postsecondary pathways (Bowen et al., 2011; Finnie, Sweetman, et al., 2008; Roderick et al., 2011).

The TDSB research team has done considerable work on a grade 9 'high achievement variable' which has been shown to be highly predictive of positive student outcomes including graduation, postsecondary confirmation, and indeed, postsecondary graduation (e.g., Brown et al., 2021a). Students are classified as having very high achievement if they have at least 8 credits with level 4 marks (A-range) in all 4 academic courses, high achievement if they have at least 8 credits and level 4 marks in 1-3 academic courses, medium achievement if they have at least 8 credits but no level 4 marks, and low achievement if they have fewer than 8 credits.

Overall, the majority of students with medium, high and very high achievement in grade 9 went on to take 12U English; but only 18.3% of those students who obtained fewer than 8 credits completed 12U English. In Math, only 6.3% of those with fewer than 8 credits in grade 9 completed one or more 12U Math courses; fully 84% of this student group did not take any Math at the grade 12 level. Fewer than half of students with 'medium' achievement went on to take at least one U Math course.

There is no question that ensuring all students are receiving high quality instruction, rich curriculum, and positive school experiences and relationships to boost underlying achievement for all groups is a key equity strategy. At the same time, it is critical to be aware of the role of structures within school systems that may create glass ceilings and have disproportionate impact on some groups. In particular, during the years from which the data in this report was taken, early streaming in grades 9 and 10 – which disproportionately affected some racialized student groups, students with disabilities and low income students – was an additional and powerful predictor of who completed which upper year courses; applied Math, for example, did not prepare students to be able to take University Math in grade 11 and 12 (Parekh et al., 2021).

As we will see below, the grade 9 high achievement variable is particularly useful because it allows us to look more closely and critically at demographic differences in course choices, controlling for prior achievement.

It is an exceptionally problematic if students with similar levels of achievement wind up with markedly different patterns of enrollment – reflecting differences in race or disability status – in courses which open the door to long-term future achievement. This situation raises serious concerns about systemic discrimination.

Black, Latin American and Southeast Asian students less likely to enroll in key 'gateway' courses than others with similar achievement

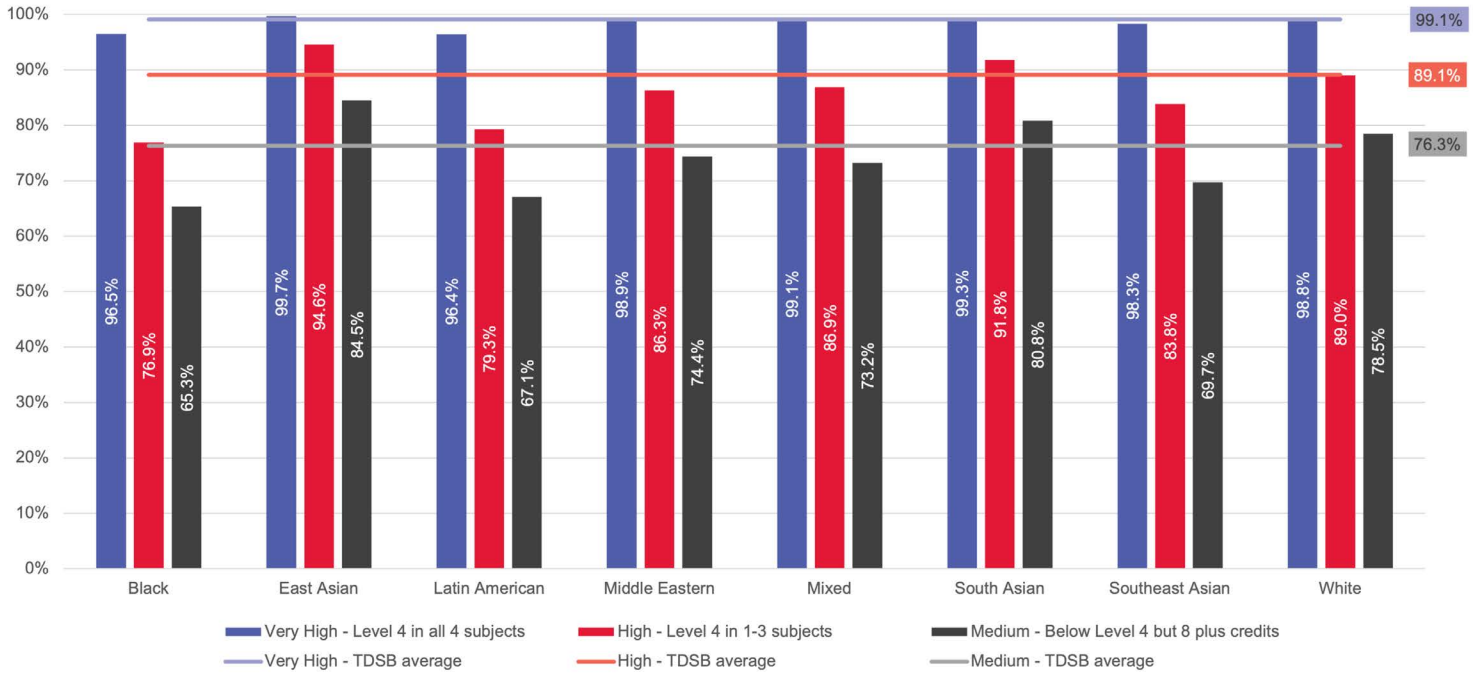
When we control for prior achievement, unfortunately, patterns of underrepresentation for key historically marginalized racial groups are starkly visible, at every level of achievement. Even among students with 'very high' grade 9 achievement – a group that, overall, is 99.1% likely to go on to postsecondary, Black and Latin American students are notably less likely to go on to PSE (96.5% and 96.4%, respectively).

Disparities get larger as student achievement levels decline; for students with 'medium' achievement, social capital is likely to play a much larger role in the process of choosing, applying to and enrolling in postsecondary (Ma, 1999; Nagaoka et al., 2009; Plank & Jordan, 2001; Schneider, 2007). Students' social capital reflects a mixture of factors, which include family members' education and access to social networks, teacher expectations and school culture, and parental expectations and practices (Coleman, 1988). Large scale research from Chicago showed that schools with a 'college-going culture' had a more significant impact on postsecondary enrollment patterns for students whose achievement was in the middle range (Nagaoka et al, 2009). That is, social factors beyond academic performance help shape students' decisions about, in the words of the Careers Curriculum, what postsecondary 'destination' will "suit their aspirations, skills, interests, values, and

personal circumstances" (Ministry of Education 2013, p.16). Black students with medium achievement are 11% less likely to take 12U English than the TDSB average (65.3% vs. 76.3%); and East Asian students with comparable achievement are 8.2% *more* likely than TDSB average to access the rigorous curriculum that strongly correlated with their chances of going on to postsecondary education (84.5% vs. 76.3%). Among White students, by contrast, although they are less likely to be enrolled in U courses than TDSB average, the difference vanishes when we control for prior achievement.

FIGURE 8A.

Percentage of students enrolling in 'University' English courses, by race and prior achievement, 2006-2015 cohorts (n=102,082)



Students with disabilities are *far* less likely to be enrolled in 'University' courses than those of comparable achievement

Among students with disabilities, similar patterns are apparent. When we control for prior achievement, there are very stark differences between the levels of enrollment in the key gateway courses for disabled students, relative to other students and depending on whether they had gone through an IPRC process. Indeed, among students with very high achievement, 69.1% of students with disabilities and a formal identification enroll in 12U English, compared to 99.6% of students with no disability and a similar achievement profile. At the other extreme, looking at students who had 'low' grade 9 achievement (fewer than 8 credits), only 12.2% of students with disabilities (IPRC) enroll in 12U English, while 50.8% of non-disabled students with 'low' grade 9 achievement do.

FIGURE 8B.

Percentage of students enrolling in 'University' English courses, by disability and by prior achievement, 2006-2015 cohorts (n=131,442)

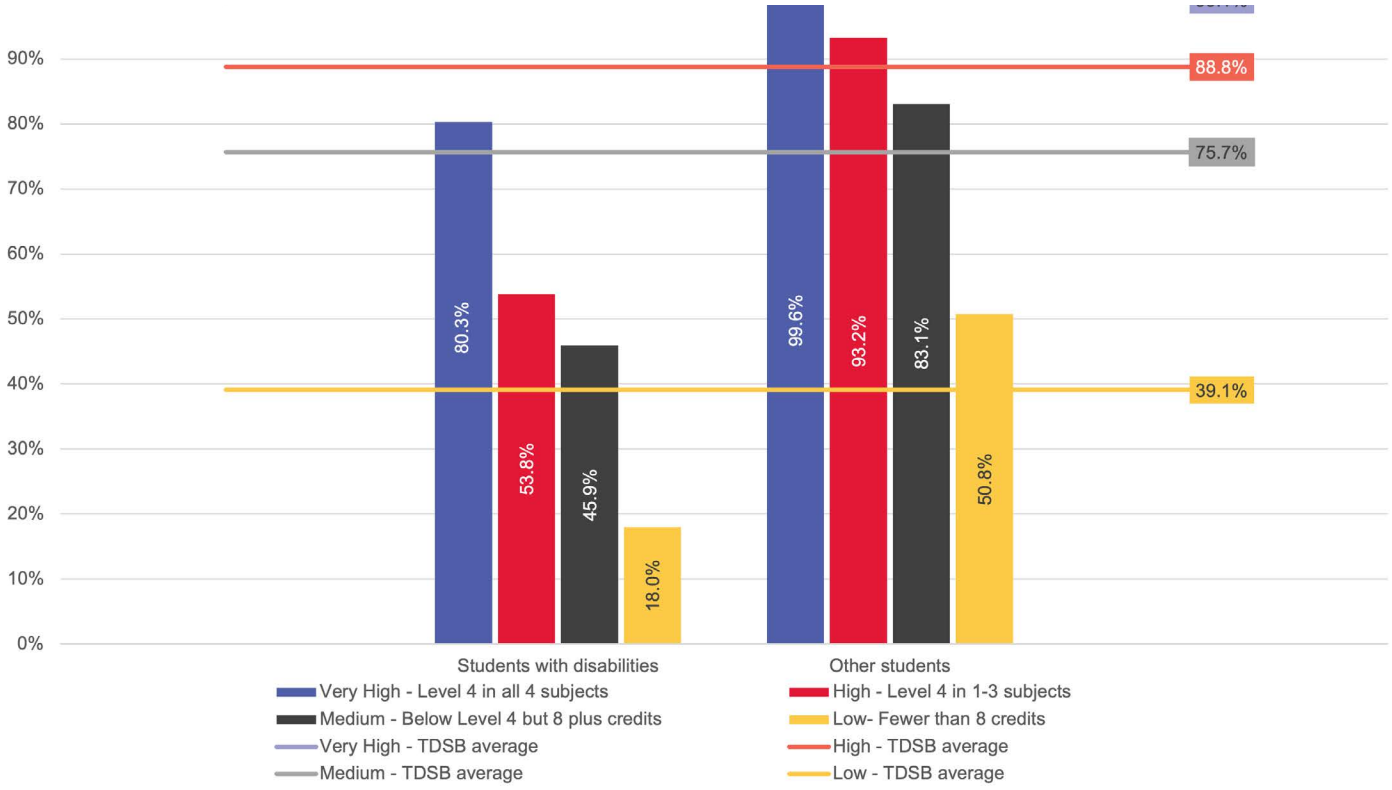
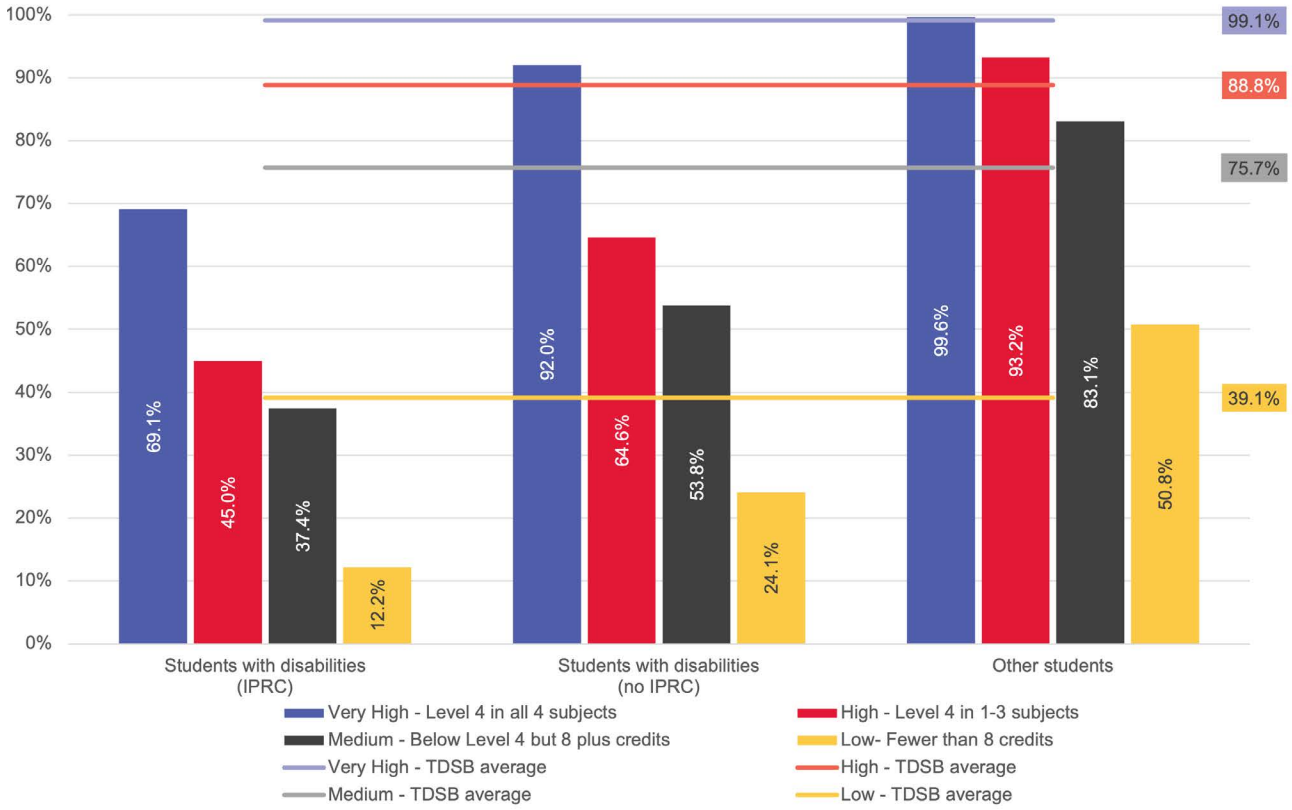


FIGURE 8C.

Percentage of students enrolling in 'University' English courses, by disability (IPRC & no IPRC) and by prior achievement, 2006-2015 cohorts (n=131,442)



These are disturbing findings, which point to systematically low expectations tied to students' special education status and/or disability, with significant potential long-term consequences for their futures.

Conclusions

This paper explores students' pathways to postsecondary education and training through the lens of educational opportunity, operationalized here through the lens of equitable access to rigorous upper year curriculum.

The empirical portion of the report draws on comprehensive data from the Toronto District School Board for ten cohorts of students, linked to information about demographics, course choices, grades, credit accumulation, high school graduation and postsecondary education confirmations. We look at students who started grade 9 between 2006 and 2015 and follow them for five years. In total, this data set includes 150,000 students and has information on postsecondary confirmations up to 2020.

As has been demonstrated elsewhere, there are significant disparities in both graduation and postsecondary access along lines of race and disability. We argue that there is a need for policy attention to differences between rates of graduation and vs. rates of postsecondary access, which tends to be much lower.

There is a clear relationship between patterns of upper year course-taking and students' access to postsecondary. While 'College' and 'University' courses count equally towards the attainment of an Ontario Secondary School Diploma, in reality, only a small percentage of students go on to postsecondary without taking at least one or two 'University' courses in grade 12. Almost 100% of those who go on to university, and the majority of those who go to college take Grade 12U English. University Math, too, is an important invisible gatekeeper course. While only about 70% of students take Math in grade 12, almost all of those who do take at least one grade 12U Math course go on to postsecondary. Fewer than a quarter of students who take exclusively "College" courses actually go to college after high school.

Some racial groups, and students with disabilities are significantly underrepresented in the upper year courses that are strongly related to improved postsecondary access. Black, Latin American and Southeast Asian students, as well as students with disabilities enroll in these critical courses at levels much lower than board-wide averages or their share of the student body. These patterns of under-representation persist when we control for prior achievement, which is strongly suggestive of systemic discrimination.

Recognition of the problem is perhaps simpler than finding ways to address it, however, given the obligation of the province and school boards under the *Charter of Rights* and *Ontario Human Rights Code* to take action to identify and overcome systemic discrimination, an active strategy is required. The current policy framework of the provincial government conceives of postsecondary outcomes as a matter of individual responsibility or choice – despite the mountain of evidence showing it is associated with a range of better life and civic outcomes – which appears to be part of the problem.

Recommendations

This report highlights disparities in access to rigorous upper year curriculum which may contribute to significant disparities in postsecondary access and limits some students' pathways into postsecondary institutions. Addressing such a significant, system-level problem will require active engagement of communities and professionals in both K-12 and postsecondary institutions to develop effective change strategies at the level of policy and practice, and better ensure that students are indeed having equitable opportunities for high educational attainment and a better life. In addition to a continuing focus on strengthening achievement for all students, a key element of this problem is the continuing need to identify and address race- and disability-based discrimination in students' experiences and educational processes.

The Toronto District School Board has been consistently working to incorporate change based on its ongoing analysis of patterns of human-rights related discrepancies. For example, they have begun to report on students enrollment in "University" courses as part of their Pandemic Recovery reporting. New structures, such as the Centre of Excellence for Black Student Achievement, work on translating research into action to benefit students. Continuing hard work remains urgent.

We also have a number of specific recommendations that could be implemented relatively easily that flow fairly directly from this research.

Recommendations for policy:

Change misleading names for course types

Our research suggests that the current names of upper year course types in the Ontario curriculum are misleading, raising particular concern for students whose families may have less knowledge of the system – those already least likely to go on to postsecondary. In particular, fewer than a quarter of graduates who have taken exclusively 'College' courses are actually on a path to enter and succeed in college, and most college-bound students take some 'University' courses (see also Brown et al., 2021a). The Government of Ontario should consider renaming the courses to reflect actual pathways.

Students are entitled to *informed* choices

In *Creating Pathways to Success*, the Grade 10 Careers Curriculum heavily emphasizes the role of student and family choice of destination. The government should take active steps to ensure that these are informed choices, by requiring specific content on postsecondary outcomes associated with different course types, and financial, civic and health outcomes associated with different postsecondary destinations, as a supplement to the current inquiry-based process.

Recommendations for provincial data collection and linkages:

Apprenticeship

We need to be able to understand students' progress into apprenticeship as part of a complete picture of postsecondary pathways. Linking Apprenticeship data to the Ontario Education Number would allow a better understanding of students' pathways into and progress within the skilled trades both in terms of how they are prepared for apprenticeship and barriers to equitable access to the skilled trades. Information on prerequisites for apprenticeship, and outcomes including completion rates and salaries, should be routinely available through a portal readily accessible by guidance counselors, students and families.

Move responsibility for reporting on human rights related data out of Ministry of Education

The *Anti-Racism Act* (2017) S.O. 2017, c.15 mandated demographic data collection across Ontario. As of this writing, only four boards have published even summary results of this data. There has been no provincial reporting in the education sector. The failure of the Educational Quality and Accountability Office to collect and analyze demographic data (and limited analysis of special education data) to inform the public about the performance of the school system is also a matter of serious concern in terms of holding the system accountable for equity.

It is interesting to note that in other jurisdictions, there are specialized bodies, linked to the equivalent of our Human Rights Commission, that have the obligation to collect and publish disaggregated data on human rights issues (see for example, the Civil Rights Data Collection program of the Office for Civil Rights in the U.S. Department of Education).

Recommendations for future research:

This research draws only on the results from one school board. It is extremely unlikely that the issues presented here are limited to the Toronto District School Board. But it is the Board's proactive approach to using race-based data for monitoring systematic inequities that allowed this investigation and put a spotlight on the problem. It would be highly useful to see similar analyses from different boards, and at the provincial level. Indeed, now that we have identified this issue, it is arguable that it is a human-rights obligation of these public institutions to understand how it plays out across the system.

This report focuses on two key aspects of identity, race and disability (represented through special education status). There are other groups – including Additional Language Learners and Indigenous and LGBTQ2S+ students – where similar issues may arise. Furthermore, given the extent to which Statistics Canada reports highlight within-group differences based on region of origin, and generational status, further disaggregation may be required. It would be useful to extend the analysis, and specifically, to include an intersectional analysis in future studies.

During the years from which this data was taken, early streaming in grades 9 and 10 was a powerful predictor of upper year course choices; applied Math, for example, did not prepare students to be able to take University Math in grade 11. It will be an important aspect of understanding the impact of destreaming grade 9 to monitor the impact on upper year course-taking patterns and postsecondary access.

References

Bechichi, N., Jamet, S., Kenedi, G., Grundke, R., & Squicciarini, M. (2019). *Occupational mobility, skills and training needs*. OECD. https://doi.org/10.1787/30a12738-en

Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education* (3rd ed.). University of Chicago Press.

Belley, P., Frenette, M., & Lochner, L. (2011). *Postsecondary Attendance by Parental Income in the US and Canada: What Role for Financial Aid Policy*. NBER Working Papers. www.nber.org/papers/w17218

Bowen, W., Chingos, M. M., & McPherson, M. (2011). *Crossing the finish line: Completing College at America's Public Universities*. Russell Sage.

Brown, R. S. (2010). *The Grade 9 Cohort of Fall 2004*. Toronto District School Board.

Brown, R. S., & Parekh, G. (2013). *The intersection of disability, achievement and equity: A system review of special education in the TDSB*. Toronto District School Board.

Brown, R. S., Robson, K. L., Parekh, G., & Gallagher-Mackay, K. (2019, June). *Demographic and contextual factors affecting access to postsecondary.* Canadian Society for the Study of Education / Congress of Social Sciences and Humanities, Vancouver, B.C.

Brown, R. S., & Tam, G. (2016). *Research Brief 5: An eight-year study of postsecondary pathways: The student census of 2006—The Postsecondary applications process* (p. 2). Toronto District School Board.

Brown, R. S., Walters, D., Parekh, G., & Conley, C. (2021a). *Overall patterns: Match of the 2004-06 Grade 9 Cohorts with PSIS data* (p. 40). Partnership for Student Transitions, Access and Research on Tertiary Education. https://cpb-ca-c1.wpmucdn.com/sites.uoguelph.ca/dist/1/313/files/2021/12/Descriptive-Report-Overall-Patterns-TDSB-Match-to-Postsecondary-AODA-Compliant.pdf

Brown, R. S., Walters, D., Parekh, G., & Conley, C. (2021b). *Overall patterns: Match of the TDSB 2004-06 grade 9 cohorts with PSIS data* (p. 40). Partnership for Student Transitions, Access and Research on Tertiary Education.

Card, D., & Payne, A. A. (2015). *Understanding the gender gap in postsecondary education participation: The importance of high school choices and outcomes*. Higher Education Quality Council of Ontario. http://www.heqco.ca/SiteCollectionDocuments/Gender Gap ENG.pdf

Chatoor, K., & Brumwell, S. (2020). *Diving into the Trades: An In-depth look at 10 Apprenticeship Programs in Ontario*. Higher Education Quality Council of Ontario.

Chatoor, K., & Kaufman, A. (2020). *The Journey of Ontario Apprentices: From High School to the Workforce* (p. 33). Higher Education Quality Council of Ontario.

Childs, D., Finnie, R., & Mueller, R. E. (n.d.). *University attendance and the children of immigrants: Patterns of persistence and the role of background factors*. Education Policy Research Institute. NeedupdatedURL

Childs, R. A., Hanson, M. D., Carnegie-Douglas, S., & Archbold, A. (n.d.). Investigating the effects of access initiatives for underrepresented groups. *Perspectives: Policy and Practice in Higher Education*, *[2016]*, 1–8.

Christofides, L. N., Hoy, M., & Yang, L. (n.d.). The Determinants of University Participation in Canada (1977-2003). *Canadian Journal of Higher Education*, *39*(2), 1–24.

Clandfield, D., Curtis, B., Galabuzi, G.-E., Vicente, A. G. S., Livingstone, D. W., & Smaller, H. (2014). *Restacking the deck: Streaming by class, race and gender in Ontario schools*. Our Schools, Ourselves (special edition).

C.N. v. Canada (Action Travail des Femmes), [1987] Supreme Court Reports 1114 (Supreme Court of Canada 1987).

Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, *94*, S95–S120.

Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Policies. *University of Chicago Legal Forum*, *1–8*, 1–31.

De Valenzuela, J. S., Copeland, S., Huanqing Qi, C., & Park, M. (2006). Examining educational equity: Revisiting the disproportionate representation of minority students in special education. *Exceptional Children*, *72*(4), 425–441.

Deller, F. (2018). *Early intervention programs for low income students: What can evaluations reveal—A systematic review*. Ontario Institute for Studies in Education of the University of Toronto.

Domina, T., Penner, A., & Penner, E. (2017). Categorical Inequality: Schools As Sorting Machines. *Annual Review of Sociology*, *43*(1), 311–330. https://doi.org/10.1146/anurev-soc-060116-053354

Duncan-Andrade, J. M. R. (2022). *Eqaulity or Equity: Toward a Model of Community-Responsive Education*. Harvard Education Press.

Erevelles, N., Kanga, A., & Middleton, R. (2006). How Does It Feel to Be a Problem? Race, Disability, and Exclusion in Educational Policy. In *Who benefits from special educaiton? Remediating (Fixing) other peoples' children* (pp. 77–100). Lawrence Erlbaum Associates Publishers.

Executive Office of the President (U.S.). (2014). *Increasing college opportunity for low-income students: Promising models and a call to action* (p. https://obamawhitehouse.archives.gov/sites/default/files/docs/increasing_college_opportunity_for _low- income_students_report.pdf). White House.

Ferri, B., & Connor, D. (2005). Tools of exclusion: Race, disability and (re)segregated education. *Teachers College Record*, *107*(3), 453–474.

Finnie, R. (2012). *Access to postsecondary education: The importance of culture*. Education Policy Research Institute. NEED UPTEDATE URL

Finnie, R., Childs, S., & Wismer, A. (2011). *Underrepresented groups in postsecondary education in Ontario: Evidence from the Youth in Transition Survey*. Higher Education Quality Council of Ontario. http://www.heqco.ca/SiteCollectionDocuments/UnderRepdGroupsENG.pdf

Finnie, R., & Laporte, C. (2007). *Lending opportunity: Student loans and access to postsecondary education* (No. 290; Analytical Studies Research Paper). Statistics Canada.

Finnie, R., Mueller, R. E., & Wismer, A. (2008). *The effects of family income, parental education and other background factors on access to postsecondary education in Canada*. MESA Project. n Canadhttp://mesaproject. org/files/MESA_Finnie_Mueller.pdf

Finnie, R., Sweetman, A., & Usher, A. (2008). *Who stays, who goes, what matters: Accessing and persisting in postsecondary education in Canada*. McGill-Queens University Press.

Ford, R., Hui, T. S., & Nguyen, C. (2020). *Postsecondary Participation and Household Income* (p. 93). Higher Education Quality of Ontario.

Ford, R., Kwakye, I., Hui, T. S.-W., & Oreopoulos, P. (2016). *Long term impacts of supporting all*

students leaving high school to apply to college or university. SRDC. http://www.srdc.org/media/199955/impacts- of- supporting- students- leaving- high- school.pdf

Frenette, M. (2011). *What explains the educational attainment gap between Aboriginal and Non-Aboriginal Youth?* CLSSRN. https://ideas.repec.org/p/ubc/clssrn/clsrn_admin-2011-13.html

Galarneau, D., Corak, L., & Brunet, S. (2023). *Early career job quality of racialized Canadian graduates with a bachelor's degree, 2014 to 2017 cohorts*. Statistics Canada. https://www150.statcan.gc.ca/n1/en/catalogue/75-006-X202300100001

Gallagher-Mackay, K. (2017). *Data infrastructure for understanding equity of access to post-secondary access in Ontario*. Higher Education Quality Council of Ontario. https://heqco.ca/pub/data-infrastructure-for-studying-equity-of-access-to-postsecondary-education-in-ontario/

Gallagher-Mackay, K., & Brown, R. S. (2023). *Mapping the Impacts of COVID Disruptions on Post-Secondary Access in Ontario in COVID School Year 2 (2020-21)* (p. 38). Higher Education Quality Council of Ontario in Partnership with the Toronto District School Board. https://heqco.ca/pub/mapping-the-impacts-of-covid-disruptions-on-postsecondary-access-in-ontario-in-covid-school-year-2-2020-21/

Gamoran, A. (1987). The stratification of high school learning opportunities. *Sociology of Education*, *60*(3), 135–155.

Gamoran, A., & Mare, R. D. (1989). Secondary school tracking and educational inequality: Compensation, reinforcement or neutrality. *American Journal of Sociology*, *94*(5), 1146–1183.

Guiton, G., & Oakes, J. (1995). Opportunity to Learn and Conceptions of Educational Equality. *Educational Evaluation and Policy Analysis*, *17*(3), 323–336.

James, C. E. (2021). *Colour Matters: Essays on the Experiences, Education and Pursuits of Black Youth*. University of Toronto Press.

James, C. E., & Taylor, L. E. (2023). *First Generation Student Experiences in Higher Education: Counterstories*. Routledge.

James, C. E., & Turner, T. (2017). *Towards race equity in education: The schooling of black students in the Greater Toronto Area*. York University. https://youthrex.com/report/towards-race-equity-in-education-the-schooling-of-black-students-in-the-greater-toronto-area/

Kurz, A., Elliott, S. N., Lemons, C. J., Zigmond, N., Kloo, A., & Kettler, R. J. (2014). Assessing opportunity to learn for students with disabilities in general and special education classes. *Assessment for Effective Intervention*, *40*(1), 24–39.

Lavecchia, A., Oreopoulos, P., & Brown, R. S. (2015). *Evaluating student performance in Pathways to Education*. C.D. Howe Institute. https://www.cdhowe.org/public-policy-research/evaluating-studentperformance-pathways-education

Lewis, T. A. (2022). Working Definition of Ableism—January 2022 Update. *TALILA A. LEWIS*. http://www.talilalewis.com/1/post/2022/01/working-definition-of-ableism-january-2022-update.html

Losen, D. J., & Orfield, G. (Eds.). (2002). *Racial Inequity in Special Education*. Harvard University Press.

Ma, X. (1999). Dropping out of advanced Mathematics: The effects of parental involvement. *Teachers College Record*, *101*, 60–81. https://doi.org/10.1111/0161-4681.00029

Mayor, C., & Suarez, E. B. (2019). A scoping review of the demographic and contextual factors in Canada's opportunity disparities. *Canadian Journal of Education*, *42*(1), 42–86.

McCain, M. N. (2020). *Early Years Study 4: Thriving Kids, Thriving Society*. Margaret and Wallace McCain Foundation. https://earlyyearsstudy.ca/report_chapters/margaret-mccain-introduction/

Ministry of Education. (2013). *Creating pathways to success: An education and career/life planning program for Ontario schools: Policy and Program Requirements, Kindergarten to Grade 12* (p. 42). Government of Ontario. www.edu.gov.on.ca/eng/document/policy/cps/CreatingPathwaysSuccess.pdf

Ministry of Education. (2016). *Ontario Schools, Kindergarten to Grade 12: Policy and Program Requirements, 2016* (p. 107). Government of Ontario. https://www.ontario.ca/page/overview-policy-and-program-requirements-ontario-schools

Nagaoka, J., Roderick, M., & Coca, V. (2009). *Barriers to College Attainment: Lessons from Chicago* (p. 34). Centre for American Progress. https://cdn.americanprogress.org/wp-content/uploads/issues/2009/01/pdf/ChicagoSchools.pdf

National Academies of Science Engineering and Medicine. (2019). *Monitoring Educational Equity*. National Academies Press. https://doi.org/10.17226/25389

National Academies of Sciences, Engineering, and Medicine. (2019). *Monitoring Educational Equity*. National Academies of Sciences, Engineering, and Medicine. https://doi.org/10.17226/25389

Oakes, J. (1985). *Keeping Track: How Schools Structure Inequality*. Yale University Press.

Ontario Human Rights Commission. (2004). *Guidelines on Accessible Education*. The Commission. http://www.ohrc.on.ca/sites/default/files/attachments/Guidelines_on_accessible_education.pdf

Ontario Human Rights Commission. (2005). *Policy and Guidelines on Racism and Racial Discrimination*. The Commission. http://www.ohrc.on.ca/sites/default/files/attachments/Policy_and_guidelines_on_racism_and_raci al_discrimination.pdf

Ontario, G. of. (n.d.). *School Board Progress Reports*. Government of Ontario. Retrieved June 6, 2022, from https://www.app.edu.gov.on.ca/eng/bpr/indresults.asp

Orpwood, G., & Schollen, L. (2010). *College Mathematics Project 2009: Pathways Analysis Report* (p. 19). York-Seneca Institute for Mathematics, Science and Technology. On file with author

Parekh, G., & Brown, R. S. (2019). Changing lanes: The relationship between special education placement and students' academic futures. *Educational Policy*, *33*(1), 111–135.

Parekh, G., & Brown, R. S. (2020). Naming and Claiming: The Tension Between Institutional and Self-Identification of Disability. *Canadian Journal of Disability Studies*, *9*(5), Article 5. https://doi.org/10.15353/cjds.v9i5.701

Parekh, G., Brown, R. S., & Abdulkarim, F. (2021). *Streaming in Education: Thinking beyond grade 9*. York University / Toronto District School Board.

Parekh, G., Brown, R. S., & James, C. E. (2020). *Who comes to York? Access, participation and graduation trends.* York University.

Parekh, G., Brown, R. S., Tran, K., Barron, K., James, C. E., Winton, S., & Abdulkarim, F. (in preparation). *Critical Transitions: Identifying Key Factors Shaping Students' Elementary, Secondary and Post-Secondary Pathways*.

Parekh, G., Flessa, J. J., & Smaller, H. (2016). The Toronto District School Board: A global city school system's structures, processes and student outcomes. *London Review of Education*.

People for Education. (2014). *The trouble with course choices in Ontario High Schools*. Author. https://peopleforeducation.ca/report/applied-and-academic-streaming/

Pichette, J., Deller, F., & Colyar, J. (2020). *Destreaming in Ontario: History, evidence and educator reflections*. Higher Education Quality Council of Ontario. https://heqco.ca/pub/destreaming-in-ontario-history-evidence-and-educator-reflections/

Plank, S. B., & Jordan, W. J. (2001). Effects of Information, Guidance, and Actions on Postsecondary Destinations: A Study of Talent Loss. *American Educational Research Journal*, *38*(4), 947–979.

Psacharopoulos, G. (2018). Returns to investment in education: A decennial review of the global literature. *Education Economics*, *26*(5), 445–458. https://doi.org/10.1080/09645292.2018.1484426

Public Health Agency of Canada, Boyd, R., & Marshall, H. (2008). *The Chief Public Health Officer's report on the state of public health in Canada, 2008*. Chief Public Health Officer. https://www.deslibris.ca/ID/214634

Published plans and annual reports 2020-2021: Ministry of Education. (n.d.). Ontario.Ca. Retrieved June 6, 2022, from http://www.ontario.ca/page/published-plans-and-annual-reports-2020-2021-ministry-education

Quan, D., & James, C. E. (2017). *Unlocking student potential through data: Final Report submitted to the Ministry of Education*. Ontario Ministry of Education. https://news.yorku.ca/files/Feasibility-Study-Unlocking-Student-Potential-through-Data-FINAL-REPORT-Feb-2017.pdf

Restoule, J.-P., Mashford-Pringle, A., Chacaby, M., Smillie, C., & Brunette, C. (2013). Supporting successful transition to post-secondary education for Indigenous Students: Lessons from an Institutional Ethnography in Ontario, Canada. *International Indigenous Policy Journal*, *4*(4).

Robson, K., Anisef, P., Brown, R. S., & George, R. (2018). Underrepresented students and the transition to post-secondary: Comparing two Toronto cohorts. *Canadian Journal of Higher Education*, *48*(1), 39–59.

Robson, K. L., Anisef, P., Brown, R. S., & Parekh, G. (2014). The intersectionality of Postsecondary Pathways: The Case of High School Students with Special Education Needs. *Canadian Review of Sociology*.

Robson, K. L., Anisef, P., Newton, L., & Tecle, S. (n.d.). *An analysis of provincial and institutional policy around the inclusion of marginalized students in Ontario Postsecondary Education*. York University. http://gatewaycitiesproject.info.yorku.ca/files/2015/04/Policy_Analysis_RobsonAnisefNewtonTecle. pdf

Robson, K., Maier, R., Anisef, P., & Brown, R. S. (2019). *High school success and access to post-secondary education*. Higher Education Quality Council of Ontario.

Roderick, M., Coca, V., & Nagaoka, J. (2011). Potholes on the Road to College: High School Effects in Shaping Urban Students' Participation in College Application, Four-year College Enrollment, and College Match. *Sociology of Education*, *84*(3), 178–211. https://doi.org/10.1177/0038040711411280

Schneider, B. (2007). *Forming a college-going community in U.S. public high schools*. Gates Foundation.

Schuller, T. (2001). *The complementary roles of human and social capital* (p. 28). OECD.

Schultz, T. W. (1961). Investment in Human Capital. *American Economic Review*, *51*(1), 1–17.

Statistics Canada. (2017a). *Does education pay? A comparison of earnings by level of education in Canada and its provinces and territories* (No. 98-200-X2016024). Author. https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016024/98-200-x2016024-eng.cfm

Statistics Canada. (2017b). *National Apprenticeship Survey: Canada Overview Report* (No. 81-598–X). Government of Canada.

Statistics Canada. (2021, March 15). *School closures and COVID-19: Interactive Tool*. https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2021009-eng.htm

Statistics Canada. (2023). *A portrait of educational attainment and occupational outcomes among racialized populations in 2021* (p. 12). Statscan. https://www12.statcan.gc.ca/census-recensement/2021/as-sa/98-200-X/2021011/98-200-X2021011-eng.cfm

Truth and Reconciliation Commission of Canada. (2015). *Honouring the Truth, Reconciling for the Future: Summary of the Final Report*. Centre for Truth and Reconciliation, University of Manitoba. https://nctr.ca/records/reports/#trc-reports

Turcotte, M. (2015). *Political participation and civic engagement of youth* (Insighhts on Canadian Society). Statistics Canada. https://www150.statcan.gc.ca/n1/pub/75-006-x/2015001/article/14232-eng.pdf

Underwood, K. (2009). *The construction of disability in our schools: Teachers and parents' perspectives on the experiences of labelled students.* Sense Publishers.

Willms, J. D. (2002). *Vulnerable children: Findings from the National Longitudinal Study on Children and Youth*. University of Alberta.

Yau, M., Rosolen, L., & Archer, B. (2015). *Parent Involvement, 2011-12 Student and Parent Census* (TDSB Fact Sheets, p. 4). Toronto District School Board. http://www.tdsb.on.ca/Portals/research/docs/reports/2011-12CensusFactSheet12-ParentInvolvement12Apr16.pdf