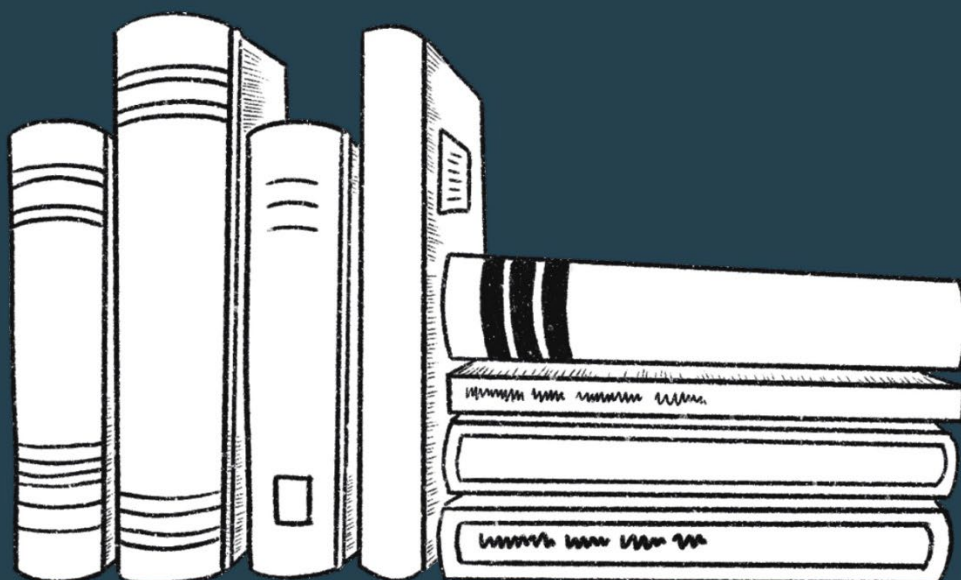


Higher Education Quality Council of Ontario



An agency of the Government of Ontario



Mapping the Impacts of COVID Disruptions on Postsecondary Access in Ontario in COVID School Year 2 (2020-21)

Longitudinal Data from the Toronto District School Board

Kelly Gallagher-Mackay and Robert S. Brown
with Christine Corso and George Tam

Published by:

The Higher Education Quality Council of Ontario

**88 Queens Quay West, Suite 2500
Toronto, ON
Canada, M5J 0B8**

Phone: (416) 212-3893

Fax: (416) 212-3899

Web: www.heqco.ca

E-mail: info@heqco.ca

Cite this publication in the following format:

Gallagher-Mackay, K. & Brown, R. S. with Corso, C. & Tam, G. (2023) *Mapping the Impacts of COVID Disruptions on Postsecondary Access in Ontario in COVID School Year 2 (2020-21)*. Toronto: Higher Education Quality Council of Ontario.



An agency of the Government of Ontario

The opinions expressed in this research document are those of the authors and do not necessarily represent the views or official policies of the Higher Education Quality Council of Ontario or other agencies or organizations that may have provided support, financial or otherwise, for this project. © King's Printer for Ontario, 2023.

Table of Contents

List of Figures.....	4
Executive Summary	5
Introduction.....	7
Literature Review	9
The Impact of the Pandemic on Postsecondary Access: A Comparative Picture	9
Context: Educational Disruptions in 2020-21	10
Data and Methods	12
Key Findings.....	13
Unprecedented Grade Increases Continued.....	13
Four-year Graduation Rates Rose through the First Two Years of the Pandemic.....	14
University Access Improved while College Access Declined.....	15
More Five-year Grads Confirmed University and Fewer Confirmed College in 2021.....	16
The Rate of University Confirmations Exceeds Predictions for Low- and Medium-Achieving Students	18
A Mixed Picture Emerged in Demographic Disparities in Graduation and Postsecondary Confirmation.....	21
Male Students Narrowed Gaps in Graduation and University Confirmations	21
Secondary School Graduation and University Confirmations Increased for First-generation Students	22
Students with Special Education Needs Fell Further Behind with Minimal Gains.....	23
Different Racial Groups Experienced Divergent Access Outcomes	26
Discussion and Conclusion.....	28
References.....	32

List of Figures

Figure 1	Mean Grades for Grade 12 Students.....	14
Figure 2	Four-year Credit Accumulation, Baseline Year, COVID School Year 1 and COVID School Year 2.....	15
Figure 3	Postsecondary Outcomes, All Students After Four Years.....	16
Figure 4	Postsecondary Outcomes for Four- and Five-year Students.....	18
Figure 5	Percentage of Year-four Students Confirming University by Grade 9 Achievement.....	19
Figure 6	Percentage of Year-four Students Confirming College by Grade 9 Achievement.....	20
Figure 7	University and College Confirmations by Gender, Baseline Year and COVID School Years 1 and 2.....	22
Figure 8	University Confirmations by Parental Education, Baseline Year and COVID School Years 1 and 2.....	23
Figure 9	University and College Confirmations by Special Education Status, Baseline Year and COVID School Years 1 and 2.....	25
Figure 10	College and University Confirmations by Racial Identity, Baseline Year and COVID School Years 1 and 2.....	27

Executive Summary

The ‘generational catastrophe’ of COVID-19 and related disruptions to education have highlighted concerns about students’ learning and progress across the globe. However, there has been very little large-scale Canadian data to help take stock of the situation facing Canadian youth, both in terms of students’ progress through and beyond school and of their underlying knowledge and skills. A key point of transition, with long-term implications for students and society, is the end of secondary school.

Using key progress measures, including Grade 12 grades, secondary school graduation and postsecondary access in the Toronto District School Board (TDSB), this report compares outcomes from the first two school years of COVID-19 to the ‘baseline’ year of 2018-19. It adds to two previous HEQCO reports on [graduation](#) and [postsecondary transitions](#) during COVID School Year 1, showing student progression despite hardships, and raises important issues for the education system in both K-12 and postsecondary institutions in Ontario.

The report is based on data from three years of the TDSB’s Annual Student Mobility Data Set, which is based on all students who enter, exit or remain in the board from the beginning of one school year to the beginning of the next. We draw data from the pre-pandemic ‘baseline year’; ‘COVID School Year 1’; and, newly, 2020-21, ‘COVID School Year 2.’ The Data Set is linked to 11 other datasets, including administrative, demographic data and data on college and university applications and confirmations. This quantitative study includes data on over 50,000 students (50,195). It is a cohort study, where inclusion is based on study members sharing a common characteristic — in this case, being in year four of secondary school. In 2018-19, this meant 16,781 students; in 2019-20, 16,860 students; and in 2020-21, 16,554 students. We are able to track students from 2018-19 and 2019-20 through their postsecondary applications, which allows us to understand patterns for students who graduate after a fifth year as well.

Our analysis revealed the following five salient findings:

Grade 12 students’ grades increased dramatically during the pandemic.

Surprisingly, fourth-year TDSB students’ grades saw dramatic increases during the first two school years of the pandemic, from a mean of 71.3% in 2018-19 to 77.3% in 2020-21. This increase is notable because, according to provincial policy, the same assessment framework was in place. Moreover, it seems to contradict both international evidence of learning impacts and a national survey of teachers expressing concern about students meeting expectations.

Students were more likely to graduate and confirm university.

TDSB students were more likely to graduate during the pandemic (72.2% in baseline year versus 78.3% in COVID School Year 2). They were also more likely to progress directly to university during both of the first two years of the pandemic than they were in the baseline year; indeed, a majority of TDSB students intended to go straight to university (47.1% in 2018-19 versus 51.3% in 2020-21). They were slightly less likely to progress into college (12.2% in baseline versus 11.1% in COVID School Year 2). Fewer students did not apply at all, and those who did apply were slightly more likely to confirm postsecondary.

When we included students who applied to postsecondary education (PSE) in their fifth year in 2019-20 versus 2020-21, the trend of increased university confirmations was maintained, although less dramatically.

Students with 'medium' prior achievements saw the greatest increase in university confirmations.

The biggest increases in the percentage of students graduating and confirming university attendance during COVID School Year 2 came from students whose Grade 9 achievement was in the medium range (i.e., they passed all courses but received no As), not those with the lowest or very high achievement. Students whose Grade 9 achievement was in the high range (i.e., they passed all courses and received one to three As in academic subjects) were considerably less likely to confirm college during COVID School Year 2 than the baseline, but more likely to confirm university.

Males, first-generation students, and many racial groups saw improved postsecondary access.

A demographic analysis looking at gender, parental education and race did not reveal the dramatic increases in inequality of outcome in the first two years of the pandemic that many analysts feared. Gaps narrowed for male students relative to female students and for students whose parents did not attend university relative to those who did. Many historically disadvantaged racial groups — Black students, Latin American students and Southeast Asian students — saw increases in university confirmations that were greater than the TDSB average. Those same groups, however, also saw disproportionate increases in the number of students who did not apply to any PSE.

Students with Special Education Needs experienced greater COVID-19 challenges.

Perhaps the greatest concern in the data covered in this report is the situation of students with Special Education Needs (SEN). These students, already highly disadvantaged within the education system, experienced relative declines in rates of graduation and access to postsecondary. Declining relative attainment in terms of these important life outcomes, and increasing disparities, raise significant questions about how the system managed to respond to the needs of this group of students.

The data in this report raises important questions for educators, policy-makers and the public. In particular, there are questions about whether these improvements in traditional measures of academic progress translate to improvement in students underlying skills and knowledge. The data on rapidly increasing grades may raise questions about the how and why teachers are assigning particular grades, which is normally an issue that does not attract significant policy attention. Given the real risks of educational ‘scarring’ due to the disruptions of the pandemic, it is encouraging to see that students, including many groups of historically disadvantaged students, are continuing to make progress, even if we do not fully understand the dynamics behind the increases. However, colleges and universities will likely need to look beyond grades to determine incoming student preparedness and provide appropriate supports, and increased grades may bring their own pressures (Hurley, 2022a, 2022b).

Introduction

School closures and educational disruptions associated with COVID-19 have raised significant concerns about student learning, pathways into PSE and, ultimately, into job markets. The OECD has hypothesized that learning impacts associated with the pandemic will lead to widening socioeconomic gaps and both significant lost earnings (up to 3% over lifetimes) and productivity (up to 1.5% of GDP) (Hanushek & Woessman, 2020).

International evidence points overwhelmingly towards the conclusion that COVID-related closures and shifts in delivery have had adverse impacts on student learning relative to earlier years, and that the impacts have been disproportionately worse for students who were already facing disadvantages (Hammerstein et al., 2021; Patrinos, 2022; Storey & Zhang, 2021). To date, however, despite repeated calls for data on educational impacts in Canada, there remains very limited Canadian data available publicly on the impact of the pandemic on student outcomes (Gallagher-Mackay, 2020; Gallagher-Mackay, Srivastava, et al., 2021; James, 2021; People for Education, 2022).

Among a few exceptions to that trend (Georgiou, 2021; Ministry of Education and Early Childhood Development, 2022) are the reports on which the Higher Education Quality Council of Ontario (HEQCO) and the Toronto District School Board (TDSB) collaborated on to study student transitions at the end of secondary school and into PSE during the first school year affected by COVID-19. We produced two reports on the impact of school closures and ‘emergency remote learning’ between March and June 2020, looking at [Grade 12 students’ grades and graduation rates](#) (Gallagher-Mackay & Brown, 2021a) and their [confirmations in postsecondary institutions in Ontario](#) (Gallagher-Mackay & Brown, 2021b).

The reports showed that, contrary to expectations, TDSB students in Grade 12 saw increases in grades and graduation in June 2020 (COVID School Year 1) relative to June 2019 (the baseline year), and that those students were more likely to confirm university in fall 2020 and just as likely to confirm college. Increases in grades and graduation were concentrated among students in the lower-middle grade ranges (not at either extreme) and varied depending on racial/ethnic background, gender and special education status; students with SEN saw the smallest gains, thus increasing disparities in academic progression. Students' rate of postsecondary confirmations did not increase as much as the increase in graduation. Both papers concluded with a call for further research as the pandemic progressed.

This report responds to the call for public educational data to track the *ongoing* impacts of the pandemic on educational processes and experiences. It examines student outcomes — grades, graduation and postsecondary confirmations — at the end of 2020-21, which we call “COVID School Year 2,” relative to pre-pandemic baselines and the emergency remote learning period in spring 2020, or “COVID School Year 1.”

This longer time frame allows us to address a number of policy issues that were not possible in our initial research. Research into the second school year of COVID-19 allows us to look at the impact on key outcomes for student achievement at the end of secondary school and educational progression in light of significant ‘real world’ changes during COVID School Year 2. This report will also allow us to report, for the first time, on the outcomes for students who graduate after five years of secondary school. The cohort design of our original studies focused on students in year four (Grade 12) of secondary school. But approximately 20% of TDSB students graduate after five years or more. The same trend holds true Ontario-wide and is sometimes described as a “victory lap” (Brady & Allingham, 2010). These year-five students have a distinctive educational profile and are at greater risk of not progressing directly into postsecondary.

In this report, we are also able to examine outcomes for two cohorts of five-year graduates over the pandemic period, presenting graduation and postsecondary confirmation results for the cohorts of students (including those in year five) in 2019-20 and 2020-21. Finally, a new report is important because research from other emergencies affecting schooling (Andrabi et al., 2020; Jaume & Willén, 2019; La Mattina, 2018) suggests the impact of school interruptions tends to be cumulative; hence it is important to monitor change over time. A recent Canadian report on educational and labour market outcomes for Canadian youth referred to this issue as educational ‘scarring’ (Mahboubi & Higazi, 2022).

We note that there are considerable differences between demographics, policies, practices and COVID-19 prevalence across Ontario’s 72 school boards, so this report does not necessarily reflect outcomes in the province as a whole.

Literature Review

The Impact of the Pandemic on Postsecondary Access: A Comparative Picture

Secondary school graduation and progress towards PSE are key educational outcomes linked to individuals’ well-being (Canadian Council on Social Determinants of Health, 2015), earnings (Card, 1999; “Post-Secondary Graduate Earnings,” n.d.; Statistics Canada, 2017) as well as social goods, including stronger economies (Becker, 1993; Schultz, 1961) and higher levels of civic engagement (Turcotte, 2015). In a recent report, the U.S. National Academy of Sciences concluded that “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).

There has been considerable concern that the pandemic may represent a step backwards in expanding access to PSE, and in particular, access for groups of students who have long faced barriers to educational success. Systematic reviews have pointed to depressed performance on tests of literacy, numeracy and, in some cases, science in the wake of pandemic-related disruptions (Hammerstein et al., 2021; Patrinos, 2022; Storey & Zhang, 2021). Learning impacts, across many different large-scale studies, have been disproportionately harsh for certain groups of students, including those with SEN, students from low-income families and some racialized groups (Gallagher-Mackay, Srivastava, et al., 2021). In the absence of detailed information about student learning, teacher perceptions are an important data source. A national survey of 9,500 Canadian teachers in June 2021 found that three quarters of teachers said they were behind schedule in covering the curriculum, and 55% of teachers reported that students were not meeting curriculum objectives (Wong, 2021). Large-scale research in the United States has found, specifically, that the length of time spent learning remotely is adversely related to academic performance (Goldhaber et al., 2022; Halloran et al., 2021).

Alongside these measures of underlying academic skills, American data has pointed to concerns about the impact of the pandemic — intersecting with other social forces — on student enrollment in postsecondary education over the past two years. Data from the United States National Student Clearinghouse Research Center showed that, nationally, postsecondary enrollment is down over 7.4% in the past two years: enrollment dropped by 3.5% in spring 2021 and by a further 4.1% in spring 2022 (National Student Clearinghouse Research Center, 2022). Undergraduate enrollment has declined by 9.4% in two years

(-4.7% in spring 2022; -4.9% in spring 2021). In the only measure where racial identity is available (spring freshman — or first-time — postsecondary enrollment), Black student enrollment showed steeper declines than any other racial group (-6.5% compared to an average of +4.2% in spring 2022; -13.0% compared to an average of -3.5% in spring 2021). Community colleges — which disproportionately enroll lower-income and racialized students — have lost nearly 20% of their 18- to 24-year-old students since the beginning of the pandemic and 16% of their older students. One bright spot in the U.S. picture is enrollment in two-year skilled trade college programs is increasing.

In Ontario, the largest difference is in university confirmations by successful applicants, which have been on the rise in recent years and increased between 2019 and 2022, with a slight dip after the first months of the pandemic (OUAC, 2022). By June 2022, applications were up 9.1% from 2019 levels (-1.5% in June 2020; +4.3% in June 2021; +6.2% in June 2022). Between June 2021 and 2022, most of the growth in undergraduate applications has come from secondary school students (+8.7%) compared to those applying from outside the Ontario secondary school system (i.e., international students or applicants above 21 years old; +1.2%). This stands in contrast to June 2021, when increases in the percentage of students applying for university straight from secondary school (+2.1%) were more modest than other applicant categories (+9.2%). Undergraduate university confirmations also increased 6.5% from June 2019 to June 2022. This aggregate information from the Ontario Universities Application Centre (OUAC) does not include demographic analysis.

A similarity between Ontario's provincial data and the American figures is that college enrollment in Ontario decreased since the initial stages of the pandemic (-1.1% between fall 2019 and fall 2020) in contrast to previous upward trends (changes ranging from +1.1% to +8.1% annually since fall 2012, a trend heavily influenced by the [growing numbers of international students](#)).¹ Fall 2021 enrollment data is not yet available from the Ontario Colleges Admissions Centre to provide provincial context for the findings in this report.

Context: Educational Disruptions in 2020-21

Students' movement into or away from postsecondary in Ontario over the past few years takes place against the context of significant educational disruptions associated with the pandemic. After an initial period of 'emergency remote learning' between March and June 2020, which included a freeze on marks and relatively little policy direction as to how educators were to manage online instruction, the Government of Ontario established the basic framework for educational delivery in 2020-21 in a number of policy documents released in the summer of 2020 (Ministry of Education, 2020). The province imposed

¹ Authors' calculations are based on Ontario Ministry of Colleges and University, "College enrolment," Government of Ontario, June 7, 2022: <https://data.ontario.ca/en/dataset/college-enrolment>.

minimum time requirements for synchronous and in-person instruction, expected that the full Ontario curriculum would be delivered, and the existing *Growing Success* policy would guide teacher assessment (Government of Ontario, 2010). Teachers were expected to provide differentiated support for students with SEN, in accordance with their Individual Education Plans, and for English-language learners. Despite these policy continuities, it is no understatement to say that there were massive educational disruptions affecting students throughout the 2020-21 school year.

Under the Ministry's framework, secondary schools in Toronto were to be operated *either* on an "adapted model of part-time attendance, alternating between attending in-person and online" *or* by offering fully remote learning. Parents were given the option of choosing between them for students; in December 2020, 22.8% of secondary school students in the TDSB were enrolled in fully remote schooling (Gallagher-Mackay, Brown, et al., 2021). Analyses indicated that disproportionately high numbers of racialized and low-income students enrolled in the TDSB's virtual secondary schools (Alphonso & Wang, 2020; Chmielewski & Khan, 2020). Although curriculum and assessment were intended to be delivered 'as normal,' there were major changes to educational delivery to limit students' exposure to COVID-19. Beyond fully remote delivery for many students, these changes included alternating days of in-person and remote ('blended learning'); the introduction of quadesters, where students took two subjects at a time in a compressed time period (a few schools even used 'octomesters,' where students took one subject at a time); and significant restrictions on student movement and classroom activities (e.g., restrictions on labs or technology classes). As part of infection control measures, most extracurricular activities and sports, strongly associated with student engagement, were suspended along with gatherings such as assemblies, trips and other enrichment activities (People for Education, 2021). Although there was government support to provide every student with access to appropriate devices and internet access (Ministry of Education, 2020), surveys from Toronto Metropolitan University's Diversity Institute suggest that low-income students were much more likely to share devices and face problems with connectivity (Environics Institute et al., 2021).

Finally, despite the extensive changes intended to improve safety for in-person learning, Ontario school closures during 2021 were the longest in Canada (Gallagher-Mackay, Srivastava, et al., 2021, p.). In Toronto, where COVID-19 was exceptionally virulent by provincial standards, the municipal officer of public health imposed additional closures. Secondary school students in the TDSB experienced 14 weeks of school closures in spring 2020 and an additional 17 weeks of remote learning in the 2020-21 school year.²

² Authors' calculations are based on TDSB 2020-2021 Secondary School Calendar and News Releases; TDSB "News Releases" Toronto District School Board, 2022: <https://www.tdsb.on.ca/Media/News/News-releases>;

Data and Methods

The TDSB is the largest school board in Canada. Approximately 247,000 students attend almost 600 schools, including 110 secondary schools. The board is characterized by an extremely diverse student body: multiracial, speaking over 120 languages and with considerable extremes in family income. The TDSB also has a longstanding commitment to educational research and to sharing data with the public. A particular asset of this research program is its rich longitudinal datasets, which include linkages to extensive demographic and administrative data about students at the elemental level.

This report draws on the TDSB's Annual Student Mobility Data Set, which is based on all students who enter, exit or remain in the board from the beginning of one school year to the beginning of the next. We have drawn on three years of this dataset: 2018-19, the pre-pandemic 'baseline year'; 2019-20, or 'COVID School Year 1'; and 2020-21, or 'COVID School Year 2'.³ The Annual Student Mobility Data Set has been linked to 11 other datasets, including:⁴

- The Student Census (2017), i.e., the most recent version of a voluntary survey of students about their attitudes and backgrounds (including family education, gender, self-identified race, immigrant status and family structure). Approximately three-quarters of Grade 12 students in the Annual Student Mobility Data Set participated in the 2017 Census with some variation in response rates to individual questions.
- Comprehensive administrative data, including grades, course choices, credit accumulation and information about key educational processes, such as identification for special education and placements.
- Records of student applications to college and/or university.

Ontario Policy requires that graduation is calculated by the accumulation of 30 credits. In order to graduate, students are required to also pass the Ontario Secondary School Literacy Test in Grade 10 and document 40 hours of community service (these requirements were suspended in 2019-20 only). Data cleaning associated with these

TDSB "Secondary School Year Calendar 2020-2021," Toronto District School Board, n.d.:
<https://www.tdsb.on.ca/Portals/0/docs/Secondary%20Calendar%202020-2021%20revpdf.pdf>

³ The TDSB has extensive data-cleaning processes in place before finalizing each year's data. The 2020-21 dataset used for this report is still in draft in order to provide more timely information.

⁴ The full list of administrative datasets consists of: 1) TDSB course information for 2018-19; 2) Course information for 2019-20; 3) Selected data from the 2016-17 student census; 4) OCAS 2019; 5) OUAC 2019; 6) OCAS 2020; 7) OUAC 2020; 8) October 31, 2020 enrolment; 9) High achievement for Grade 9 for 2015-16 (Grade 12, year four 2018-19); 10) High achievement for 2016-17 (Grade 12, year four 2019-20); and 11) the 2020 Learning Opportunities Index.

additional requirements takes much longer than calculating accumulated credits and would further delay the release of this data. Analyses in previous years shows the accumulation of 30 credits is a highly accurate measure of actual graduation. This analysis relies on the accumulation of 30 credits as a proxy for graduation.

Data on students' applications to Ontario universities and/or colleges is obtained by the TDSB from OUAC and OCAS. It is merged with the Annual Student Mobility Data Set using Ontario Education Numbers (OENs), unique identifiers assigned to every student in the Ontario elementary and secondary school system. This makes it possible to know whether students applied, were accepted by and confirmed an offer of admission from an Ontario college or university, or if they did not apply to PSE in Ontario.⁵ There is no data on the small number of students who apply to or confirm university outside Ontario.

This study uses a quantitative approach involving analyses of three TDSB cohorts for which postsecondary application data is available; the total number of students for whom there is data is over 50,000 (50,195). Cohort studies refer to study designs where inclusion is based upon study members sharing a common characteristic — in this case, being in year four of secondary school in 2018-19 (16,781 students); 2019-20 (16,860 students); or 2020-21 (16,554 students).

Key Findings

Unprecedented Grade Increases Continued

Despite alarm bells from international testing and teacher surveys about curriculum coverage and student learning during COVID-19, there has been a steady increase in the mean grades for students in Grade 12 through the pandemic period. The mean average grade for all students (N=49,781 for the three cohorts) jumped substantially from 71.3% to 77.3% over the three-year period.

The largest increase in grades was among students in year four in COVID School Year 1 (see Figure 1). In our 2021 report, we hypothesized this jump in grades was due to a provincial policy of freezing grades between March 15, 2020 (the initial school closure) and the end of the school year during COVID School Year 1 (Gallagher-Mackay & Brown, 2021a). However, and somewhat unexpectedly, the trend of higher grades *continued* into COVID School Year 2, where at least theoretically, the existing provincial assessment policy, *Growing Success*, applied. School boards signalled changes in assessment; particularly, the cancellation of final exams and larger summative projects was to be

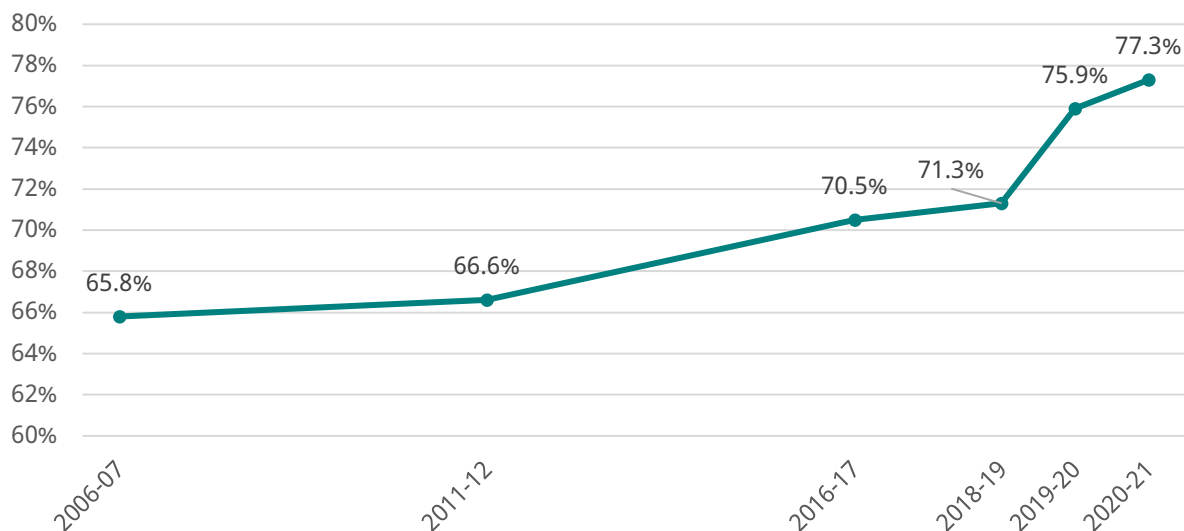
⁵ Unfortunately, this data does not allow us to look at non-college pathways into apprenticeship, which may have been considerably affected by COVID-19's impact on hands-on learning opportunities.

expected to cope with shifts in modes of instruction and scheduling during 2020-21 (TDSB, 2020).

To provide additional context for this change, we were able to obtain grades data for two historical cohorts of fourth-year students (Brown, 2021).

Figure 1

Mean Grades for Grade 12 Students



n = 107,266

Note: This figure shows the mean grade average for Grade 12 students in the TDSB from the 2006-07 to 2020-21 academic years.

This ongoing and, during the pandemic, dramatically accelerated increase in grades has implications for the process of postsecondary admissions and remains an important trend to monitor.

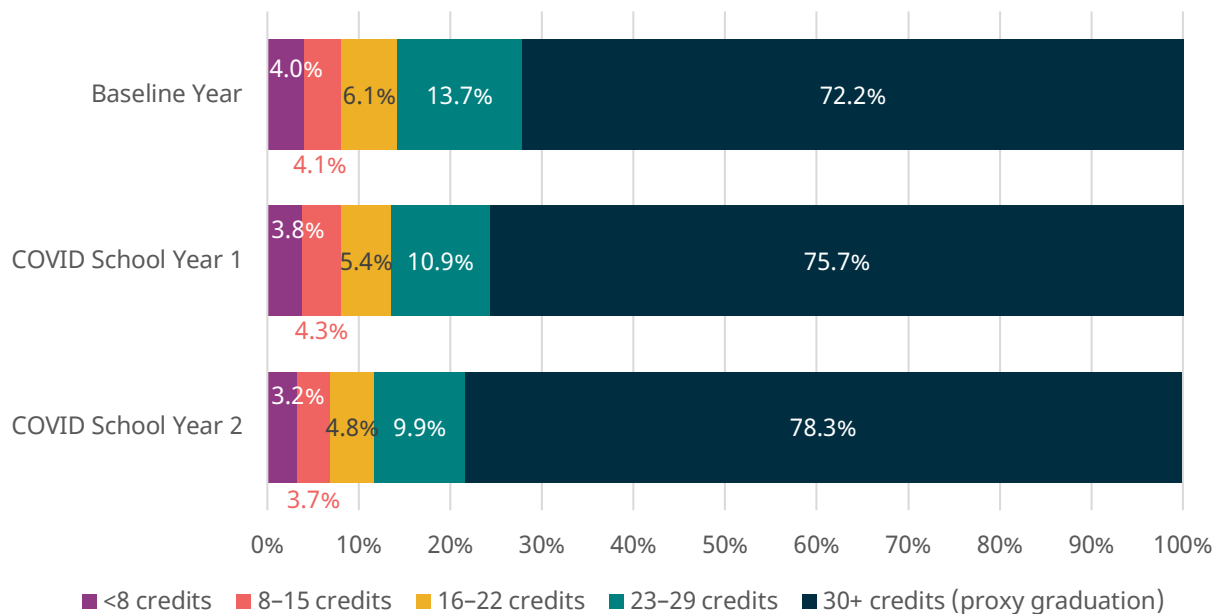
Four-year Graduation Rates Rose through the First Two Years of the Pandemic

Over the first 18 months of the pandemic, despite considerable concerns about the learning impacts of educational disruptions, there has been a steady increase in the percentage of students who have accumulated enough credits to graduate from secondary school after four years in the TDSB (see Figure 2). The four-year graduation rate has risen from 72.2% in the baseline year to 78.3% in 2020-21.

Credit accumulation, generally, increased over the two years of the pandemic, even for those students earning very few credits.

Figure 2

Four-year Credit Accumulation, Baseline Year, COVID School Year 1 and COVID School Year 2



n = 50,195

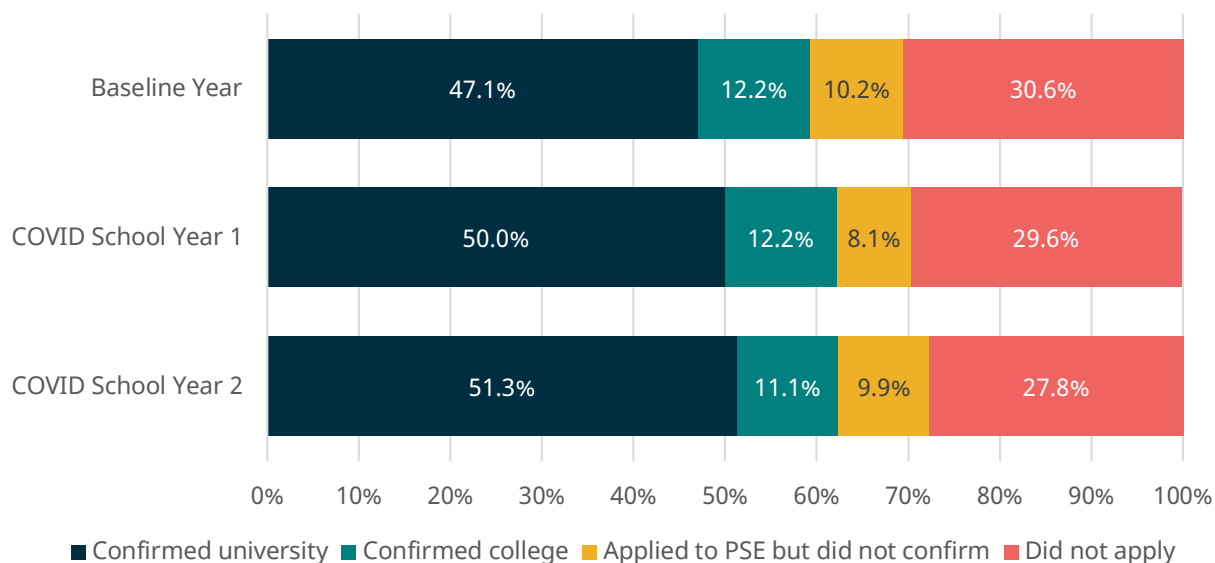
Note: This figure shows the percentages of TDSB students who earned <8, 8-15, 16-22, 23-29 or 30+ credits over four years of secondary school in each of the three years (i.e., the baseline year, COVID School Year 1 and COVID School Year 2).

University Access Improved while College Access Declined

Throughout the pandemic period, there has been a steady increase in the rate at which students move directly to university after four years of secondary school. University confirmations for this cohort have risen 4.2%, from 47.1% in the baseline year to 51.3% by the end of COVID School Year 2. By contrast, the rate of college attendance after four years has declined slightly (by 1.1%) (see Figure 3). At the same time, the pool of students who “did not apply” to postsecondary after four years declined through the pandemic, though there was variation in this pattern across demographic groups.

Figure 3

Postsecondary Outcomes, All Students After Four Years



n = 50,195

Note: This figure shows the percentages of graduating TDSB students who confirmed university, confirmed college, applied to PSE but did not confirm or who did not apply to PSE across the three years studied (i.e., the baseline year, COVID School Year 1 and COVID School Year 2).

More Five-year Grads Confirmed University and Fewer Confirmed College in 2021

Our research design allowed us to follow students from the baseline year and COVID School Year 1 through a second cycle of postsecondary applications (in 2020 and 2021, respectively). A significant number of students apply to postsecondary after five years of secondary school. This number includes students who returned to secondary school for an additional year — to complete graduation requirements, take additional credits to boost their average or acquire specific pre-requisites — *and* students who already graduated and worked or gained other experiences before applying to or confirming postsecondary. Other research, looking at postsecondary outcomes in previous cohorts, suggests that the students applying after five years are more likely to attend college than those who graduate after four years (Brown & Tam, 2016), and are considerably less likely to graduate from postsecondary (Brown et al., 2021).

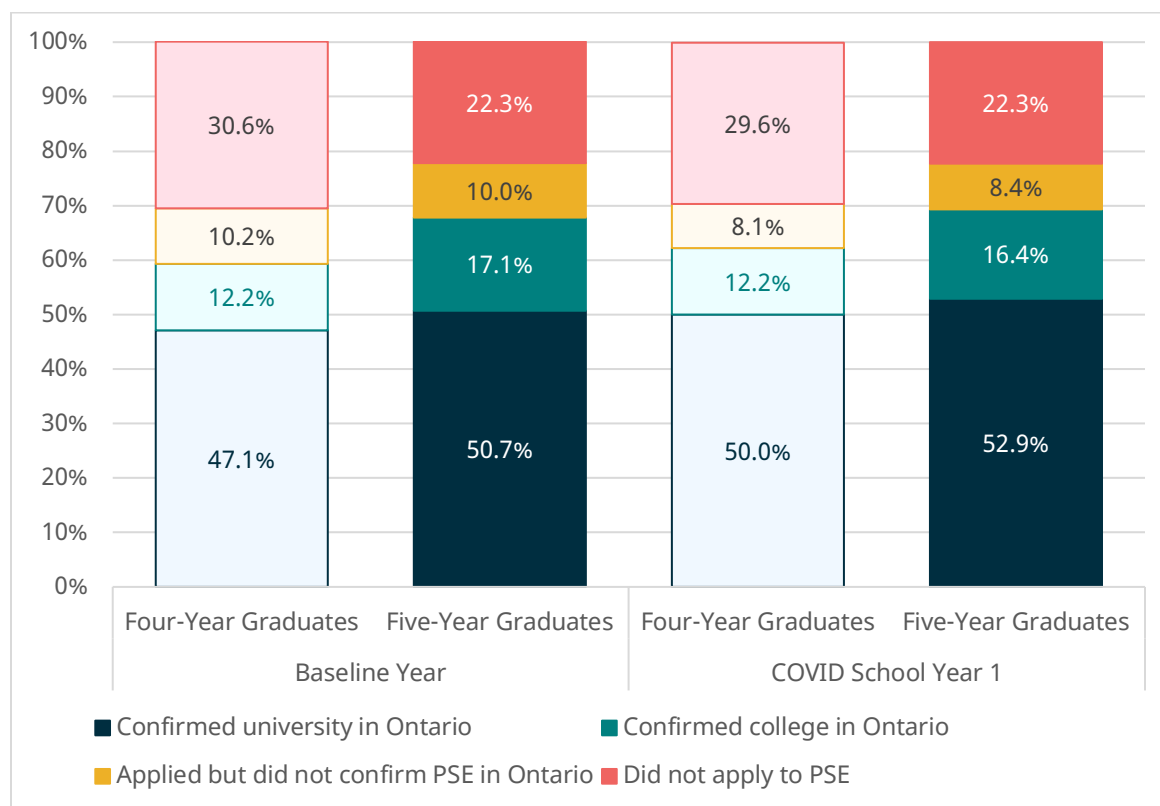
A number of shifts occurred between the two years for which we have data on a second cycle of applications (see Figure 4). We see an overall (combined) increase of 2.2% in

university confirmations between the baseline year and COVID School Year 1 cohorts after five years. The combined increase is smaller than the increase after only four years (2.9%). Among the possible explanations for this trend is that students graduating after five years are less likely overall to attend university, so it is to be expected that the more inclusive five-year transition rate did not increase as much as the four-year rate. More specifically to the COVID-19 context, since more students graduated after four years (with better grades) in 2019-20, some students who would likely have attended university got there sooner, which is reflected in the greater increase in the four-year rate of university transition; for some, however, this increase may reflect a change in postsecondary destination towards university.

At the same time, there is an overall decrease of 0.7% in TDSB students confirming college after five years relative to baseline year. In general, students attending college are more likely to come from disadvantaged groups than their university counterparts (Robson et al., 2018, 2019). The larger research literature suggests COVID-19 impacts, including educational impacts, were disproportionately experienced by students who were otherwise disadvantaged (Gallagher-Mackay, Srivastava, et al., 2021; Vaillancourt, 2021). The change documented here is relatively minor and might be attributed to routine year-to-year differences. However, the divergent trends between university and college confirmations, and the slight decrease overall in the number of students who applied for postsecondary but didn't confirm either, are worthy of note and continued observation.

Figure 4

Postsecondary Outcomes for Four- and Five-year Graduates



n = 33,641

Note: This figure compares the percentage of TDSB graduating students who confirmed university in Ontario, confirmed college in Ontario, applied to PSE but did not confirm in Ontario or who did not apply to PSE after four years of study and five years of study across two years (i.e., the baseline year and COVID School Year 1).

The Rate of University Confirmations Exceeds Predictions for Low- and Medium-Achieving Students

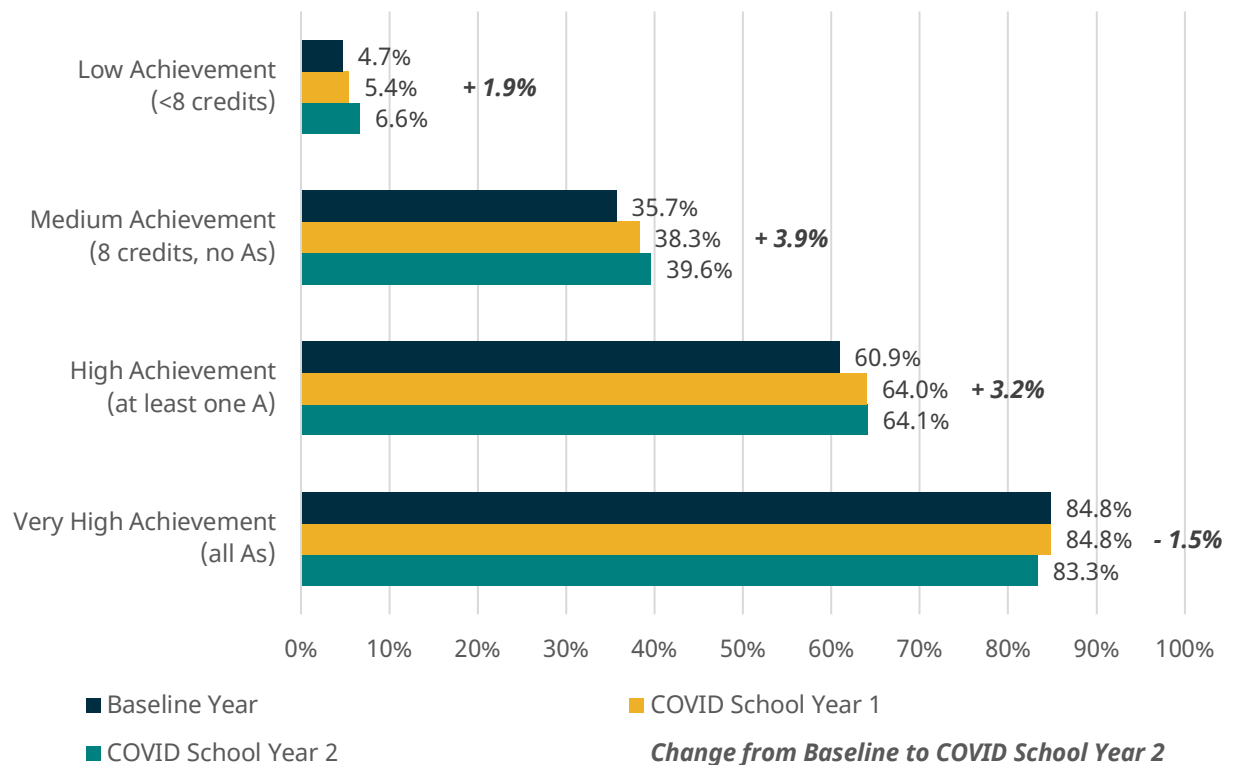
When we dive deeper from an equity of access perspective, it is important to know *which* students were most affected by COVID-19–related changes. One way to understand the impact of COVID-19 on postsecondary access is to review proven predictors of achievement.

The TDSB’s composite Grade 9 achievement indicator, which is based on both credit accumulation and grades to the end of students’ first year in secondary school, has strong predictive power for secondary school graduation, postsecondary access and completion of postsecondary studies (Brown et al., 2019, 2021). Students classified as having ‘low achievement’ were those who did not accumulate eight credits by the end of Grade 9.

Students with 'medium achievement' in Grade 9 had all their credits, but no As. Students with 'high achievement' had one to three As, and students with 'very high achievement' have As in all four mandatory Grade 9 academic subjects: English, Math, Geography and Science. The longitudinal databases from the TDSB allow us to examine fourth-year students' outcomes during COVID School Year 2 (2020-21) relative to their Grade 9 performance in 2017-18 (assuming they were registered in TDSB in both years).⁶ An analysis of students' university confirmations shows that there are significant differences between the student outcomes during COVID-19 relative to the baseline year when we control for prior achievement (see Figure 5). As in 2019-20, there were hardly any changes for the highest-achieving students. The percentage of students with lower, medium and high levels of achievement accessing university rose in both COVID School Years, relative to the baseline.

Figure 5

Percentage of Year-four Students Confirming University by Grade 9 Achievement



n = 50,195

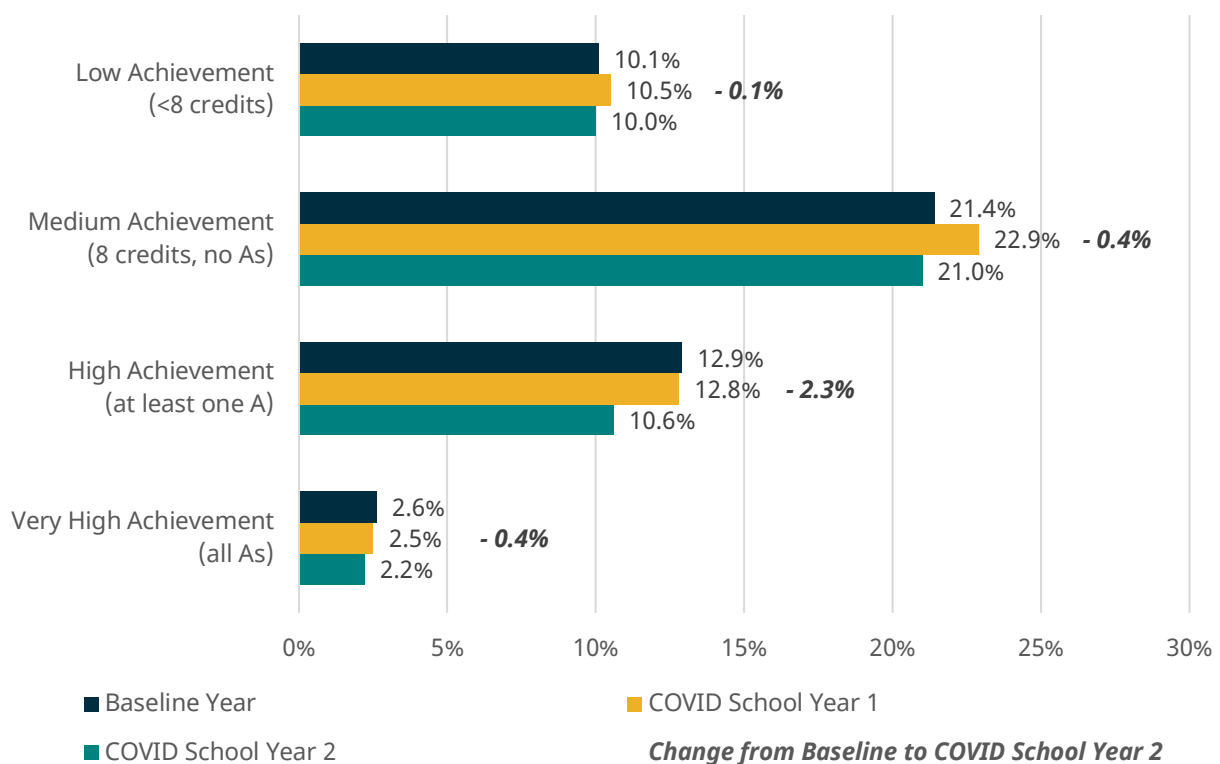
⁶ Approximately 15% of students in year four entered the TDSB after Grade 9. These students are not included in this analysis.

Note: This figure shows the percentage of TDSB students who graduated after four years and who confirmed university by level of credential and grade achievement (i.e., those who earned fewer than eight credits; at least eight credits but with no As; at least one A; and all As) across the three years studied (i.e., the baseline year, COVID School Year 1 and COVID School Year 2), noting the change in percentage from baseline to COVID School Year 2.

By contrast, there were not such clear patterns in students' college confirmations relative to Grade 9 achievement profiles (see Figure 6).

Figure 6

Percentage of Year-four Students Confirming College by Grade 9 Achievement



n = 50,195

Note: This figure shows the percentage of TDSB students who graduated after four years and who confirmed college by level of credential and grade achievement (i.e., those who earned fewer than eight credits; at least eight credits but with no As; at least one A; and all As) across the three years studied (i.e., the baseline year, COVID School Year 1 and COVID School Year 2), noting the change in percentage from baseline to COVID School Year 2.

Over the three years, there were slight declines in the rate of college confirmations for all groups of students, but the largest declines were among 'high achievement' students (-2.3% decline between 2018-19 and 2020-21, versus changes of 0.4% or less for the other groups). It is possible these students decided to apply to university instead.

A Mixed Picture Emerged in Demographic Disparities in Graduation and Postsecondary Confirmation

Male Students Narrowed Gaps in Graduation and University Confirmations

Persistent gender differences continue in the rate at which males and females⁷ graduate from secondary school after four years and at which each group goes on to postsecondary.

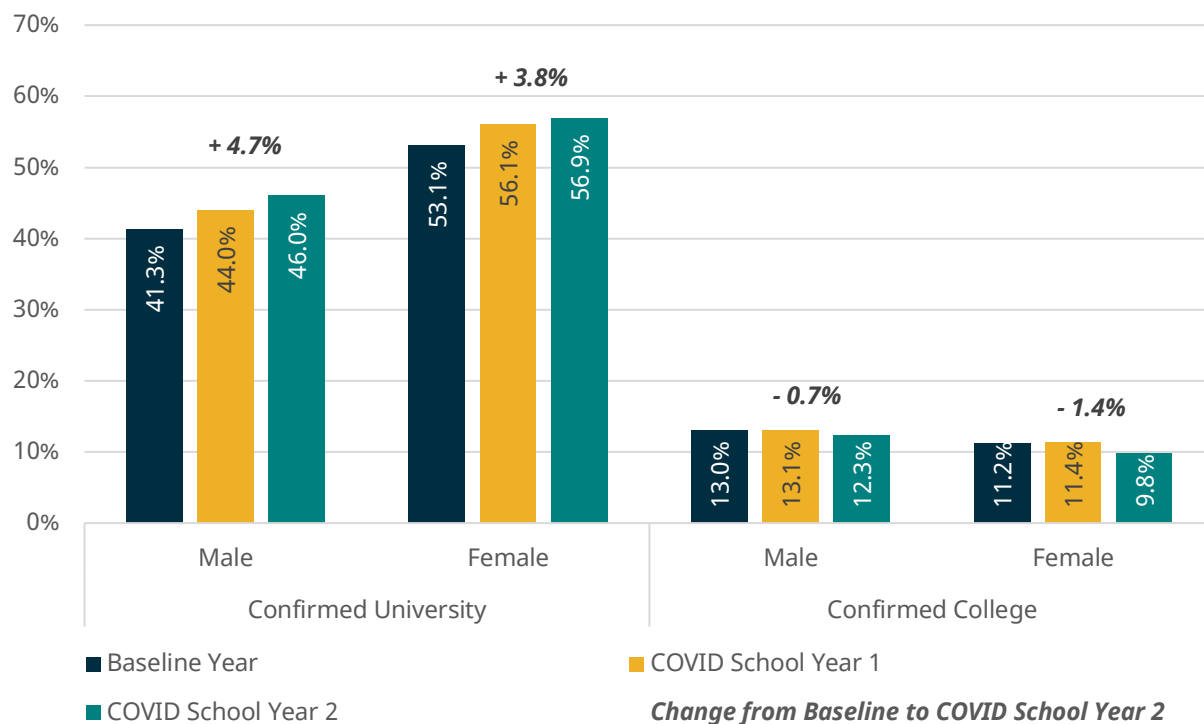
The years of COVID-19 disruption saw not only an increase in *overall* secondary school graduation, but a steady decrease in the disparities between male and female graduation outcomes: in 2020-21, 75.3% of male students and 81.5% of female students graduated after four years: a gap of 6.2%, which is considerably smaller than the baseline year difference of 9.3%, where only 67.6% of males graduated after four years. University confirmations for male students also increased more quickly (+4.7%) than the rate of confirmations for female students during the two years of COVID-19 (+3.8%), although both rose more slowly than the rate of secondary school graduation. In 2020-21, 46% of male and 56.9% of female students confirmed university after four years of secondary school.

As Figure 7 shows, there is a less consistent pattern in college admissions. Typically, male students are more likely to go on to college than female students. There was little change in the pattern of college confirmations in COVID School Year 1, but in Year 2, the overall drop in college confirmations appears to have been driven primarily by a decline in female students' confirmations. Between 2018-19 and 2020-21, there was a 1.4% drop in the rate at which female students confirmed college admission and a 0.7% drop in the rate at which males confirmed.

⁷ TDSB uses the terms male and female to refer to assigned sex at birth, and boy/man or girl/woman to refer to gender identity. Due to low numbers of students identifying as non-binary, they are excluded from the analysis.

Figure 7

University and College Confirmations by Gender, Baseline Year and COVID School Years 1 and 2



n = 50,176

Note: This figure shows the difference in PSE confirmations by gender; specifically, it shows the percentage of male and female TDSB students who confirmed university and college across the three years studied (i.e., the baseline year, COVID School Year 1 and COVID School Year 2), as well as the change from the baseline year to COVID School Year 2.

Secondary School Graduation and University Confirmations Increased for First-generation Students

Parental education is a particularly important determinant of postsecondary access (e.g., Chatoor et al., 2019; Finnie & Mueller, 2008) and an important indicator of socioeconomic status, generally (Diemer et al., 2013). Typically, when neither parent has attended PSE, a student is far less likely to pursue postsecondary. TDSB data shows the most significant gaps in PSE access are between students whose parents attended university and all other students.

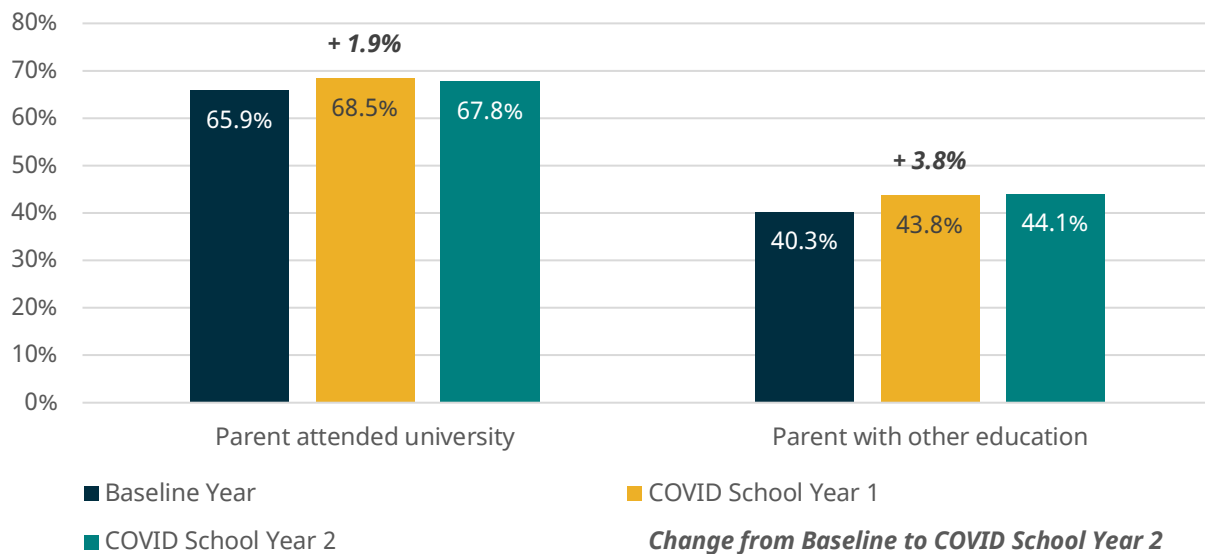
While COVID School Year 1 saw a greater increase in graduation among students whose parents had ‘other education’ relative to the baseline year, those differences appear to have largely disappeared in COVID School Year 2. Of students whose parents attended university, 90.6% graduated from secondary school after four years compared to 78% of

students whose parents had other educational backgrounds: a difference of 12.6% compared to 12.8% in the baseline year.

University confirmations increased consistently for both groups of students during the first two years of COVID-19, but they increased faster for students whose parents had other education, ultimately narrowing the gap between the two groups (see Figure 8).

Figure 8

University Confirmations by Parental Education, Baseline Year and COVID School Years 1 and 2



n = 38,077

Note: This figure shows the difference in university confirmations by level of parental education (i.e., for students whose parents attended university versus students whose parents did not) across the three years studied (i.e., the baseline year, COVID School Year 1 and COVID School Year 2), as well as the change from the baseline year to COVID School Year 2.

College confirmations, after holding steady in COVID School Year 1, declined for both groups in 2020-21, but they declined faster for students whose parents did not attend university.

Students with Special Education Needs Fell Further Behind with Minimal Gains

Approximately one-fifth of students in the TDSB have SEN, excluding gifted students, who are also identified using special education processes. Processes, settings, and accommodations vary based on students’ needs and contextual factors (Brown & Parekh, 2013). Some students go through a formal process with an assessment by a psychologist or similar professional; others have their needs identified within schools and documented with an IEP without additional professional reports. The broader literature has highlighted

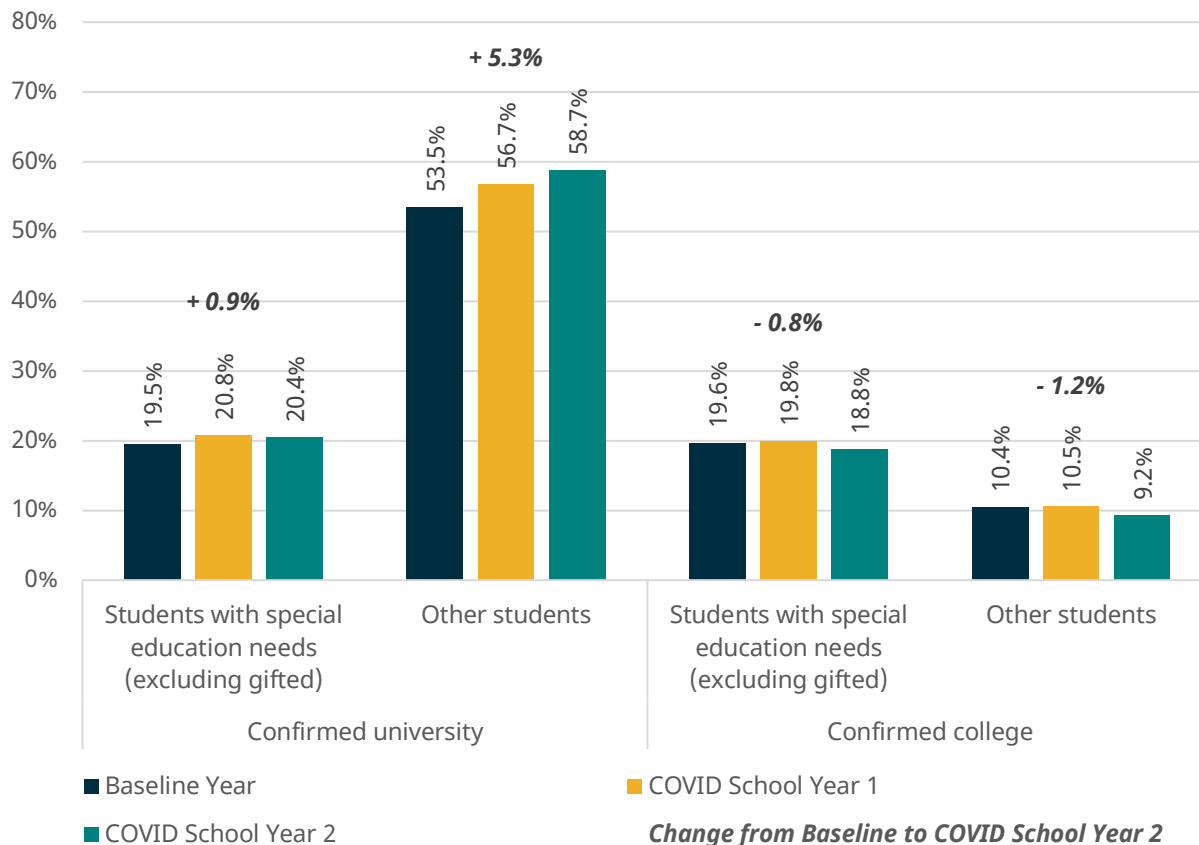
pandemic-related concerns that particularly affected disabled students, including disrupted provision of accommodations and supports and loss of community-based services that contribute to student outcomes, including learning (Averett, 2021; UCAS, 2022; Underwood et al., 2021; UNESCO, 2021).

In our reports on COVID School Year 1 (Gallagher-Mackay & Brown, 2021b, 2021a), we highlighted concern about the rate at which students with SEN (excluding gifted) were graduating and progressing on to postsecondary. While other groups of students who have historically faced educational disadvantage saw gains in educational attainment relative to TDSB averages in Year 1, students with SEN were relatively worse off after the period of emergency school closure. That trend continued — and accelerated — through the disruptions of COVID School Year 2. There was an increase in graduation after four years for all students, but the increase in graduation for students with SEN (excluding gifted) was roughly two thirds that of students without (4.3% versus 6.7%), increasing the gap between the groups. In 2020-21, 61.3% of students with SEN graduated in four years, compared to 82.4% of other students.

In terms of university, students with SEN saw almost no gains in confirmation during the pandemic. By contrast, the rate of university confirmation after four years for other students rose by 5.3% over the first two years affected by the pandemic, and from a much higher starting point (see Figure 9).

Figure 9

University and College Confirmations by Special Education Status, Baseline Year and COVID School Years 1 and 2



n = 50,195

Note: This figure shows the difference in university and college confirmations between students with SEN (excluding gifted students) versus all other students across the three years studied (i.e., the baseline Year, COVID School Year 1 and COVID School Year 2), as well as the change from the baseline Year to COVID School Year 2.

Students with SEN are more likely to attend college than other students. While there were declines in college confirmations for all groups, overall declines for students with SEN were greater than those without (and there was no offsetting increase in university confirmations).

Overall, disparities between students with SEN and other students have increased during the pandemic, as has the difference between the percentage of students for whom secondary school graduation represents an endpoint in formal education and those who move on to PSE. This is a matter of considerable concern.

Different Racial Groups Experienced Divergent Access Outcomes

Racialized students in Ontario have faced disproportionate hardships across the overall pandemic (Choi et al., 2021; Srivastava et al., 2022; Statistics Canada, 2021), and international evidence suggests particularly harsh educational impacts for, in particular, Black and Latin American students (e.g., Kuhfeld et al., 2020, 2022). Overall, however, the impact of COVID-19 disruptions on racialized TDSB students' educational attainment in terms of graduation and postsecondary access varied considerably across groups. On the whole, achievement improved for most groups, including those who have historically been less likely to graduate and access PSE, relative to the baseline year. In this study, data on subject racial identities are based on student self-identification through the student census.

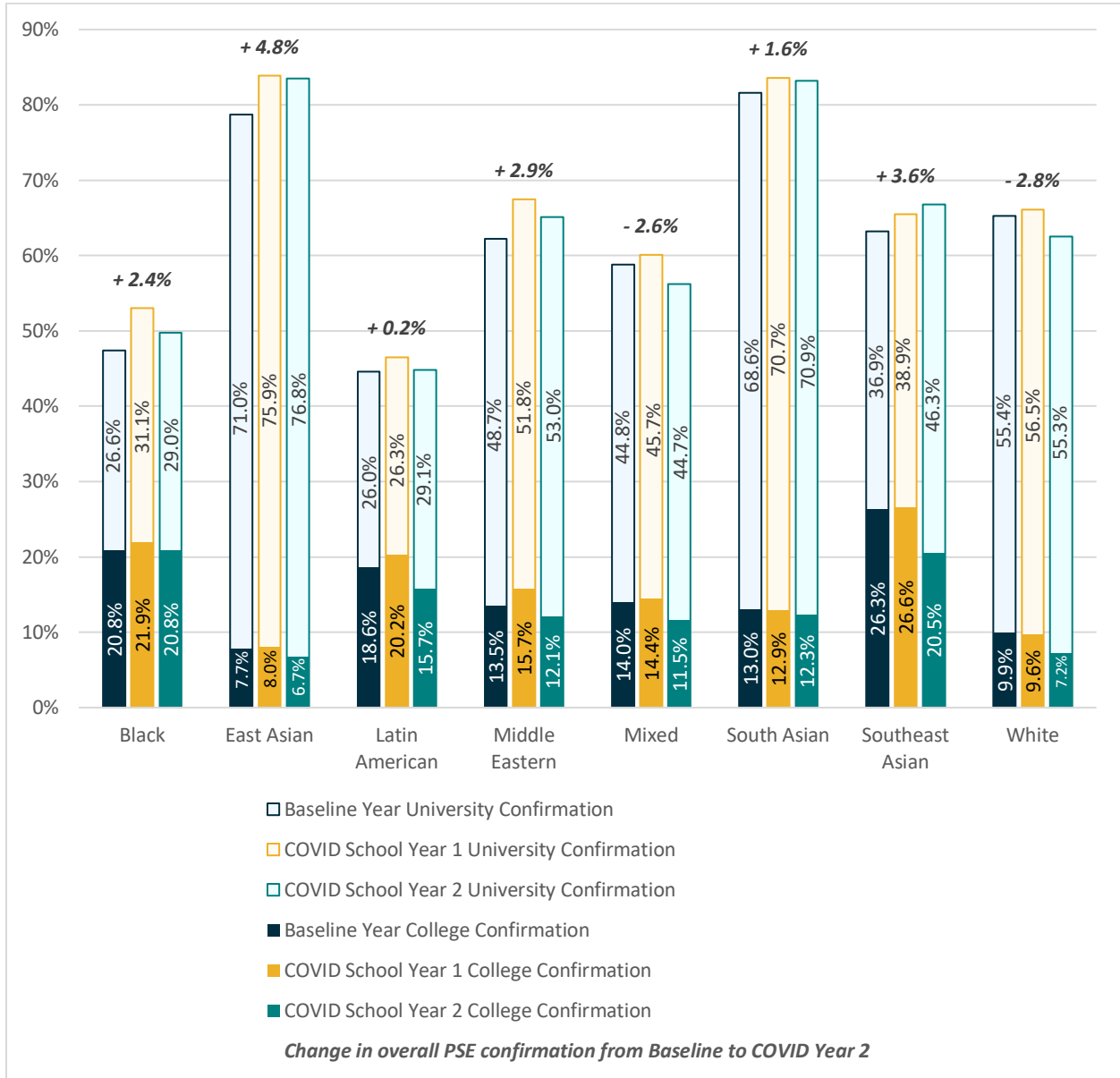
The period of emergency remote schooling in COVID School Year 1 saw a marked increase in graduation for all students (an increase of 4.1%), but particularly for racialized groups that have historically been disadvantaged, such as Black, Latin American, Middle Eastern and Southeast Asian students (a one-year increase of 4.8%, 4.6%, 5.1% and 8.3%, respectively). In COVID School Year 2, students also graduated at greater rates than during the baseline year. For most groups of students (Black, Latin American, Middle Eastern, Mixed, South Asian and white), graduation rates fell somewhat relative to COVID School Year 1 (2019-20). East and Southeast Asian students saw improvements in each year. Overall, contrary to the concerns of many academics, between-group inequality in four-year graduation did not worsen during the first two school years affected by COVID-19. Indeed, there have been significant gains for Southeast Asian students, a historically disadvantaged group in Toronto.

There are much greater racial disparities in postsecondary access than secondary school graduation. There also remain significant between-group differences in the percentage of students who go on to university as opposed to college.

The impact of the pandemic on PSE access outcomes varied based on racial groups and institution type (see Fig. 10).

Figure 10

College and University Confirmations by Racial Identity, Baseline Year and COVID School Years 1 and 2



n = 38,781

Note: This figure shows the percentage of Black, East Asian, Latin American, Middle Eastern, Mixed, South Asian, Southeast Asian and white students with university and/or college confirmations across the three years studied (i.e., the Baseline Year, COVID School Year 1 and COVID School Year 2), as well as the change in overall PSE confirmations from the Baseline Year to COVID Year 2.

University confirmations remained higher than the baseline year for most groups of students. For Southeast Asian and Middle Eastern students, both historically disadvantaged groups, there were notable *increases* between COVID School Years 1 and 2; East and South Asian students, typically strong performers, also improved in both years. For most other groups, there were slight declines from the peak of COVID School Year 1, but still an improvement relative to the baseline year.

For all groups of students except white students, college confirmations in 2020-21 dropped below baseline year levels. There were very significant one-year drops for Latin American (4.5%, to 15.7%) and Southeast Asian students (6.1%, to 20.5%), in particular. Some of the decline in college attendance may reflect a larger number of students deciding on university as their postsecondary destination during COVID-19; for other groups (Latin American and Mixed, in particular) there was an increase in the number of students not applying to postsecondary.

Discussion and Conclusion

The impact of COVID-19 on student pathways continues to unfold. This report helps fill important gaps in describing educational progression — to secondary graduation and postsecondary confirmation — for TDSB students at the end of secondary school during the first two school years of COVID-19, relative to the year before.

Concern that COVID-related educational harms may be hindering students' educational progression — 'scarring' these cohorts of students relative to future opportunities — does not seem to be a short-term issue. Our report highlights significant increases in grades, graduation and university confirmations during COVID School Years 1 and 2, relative to the baseline year. Gaps between some demographic groups — male students relative to female, and students whose parents did not attend university versus those with a parent who did attend — closed during the pandemic. There was no significant increase in inequality between racial groups on these key academic outcomes. This sunny overall conclusion, however, still includes several areas of concern. Of primary concern is how the system met the needs of students with SEN, who appear to have fallen further behind.

Students with SEN make up a substantial — and growing — proportion of TDSB students. We don't know *why* these students fell further behind, although there are many possibilities, including disruptions in services, supports and accommodations associated with remote schooling and/or changes in pedagogy, school organization and community supports (for Canadian data on younger students, see Underwood et al., 2021), as well as greater overall exposure to COVID-related hardships (Statistics Canada, 2021). Decision-makers in government and school boards will need to explore the structural changes or supports required to reverse this trend, both within K-12 and, for the minority of these

students who do progress to postsecondary, within universities, colleges and apprenticeship programs.

There is also reason to be concerned about the slight downward trend in college applications. This trend is nowhere near the magnitude we have seen in the United States, and some of this trend may be the result of more students applying to university. Students with high academic achievement, girls and East Asian students — all groups with typically high educational attainment — have seen above-average declines in college confirmations. So have students whose parents had not gone to university, students with SEN, Latin American and Southeast Asian students — all students who have typically been less likely to attend PSE. Among Latin American students and those with SEN, the college decline has not been accompanied by a comparable or greater rise in university admissions. The relatively lower rates of college confirmations is, at this point, not a clear signal of a problem but is definitely a trend that should be monitored going forward.

Alongside the overall good news in this report about educational progression, all educational institutions — K-12, college and university — need to get a better handle on what these students know and can do. While the emphasis in this report has been on academic progress, it is also clear that measures of academic progress alone are insufficient and need to be accompanied by a better understanding of the social-emotional impacts of the pandemic (Georgiades et al., 2021; Vaillancourt, 2021). The TDSB, for example, has tracked a number of key measures including students' self-reported happiness and sense of connection (Cameron et al., 2021). This information matters both in terms of the daily work of teachers and professors and at a system level in terms of planning and resources.

We still have questions about the potential mismatch between grades, progression and underlying knowledge and skills of this cohort of students. The pandemic has seen vocal demands for changed approaches to assessment and for a departure from conventional grading practices (Hurley, 2022a; McCullough, 2022). There has been a conspicuous lack of assessment that allows year-to-year comparisons of data in Ontario since the Educational Quality and Accountability Office suspended tests in 2019-20 and conducted limited assessments, on a voluntary basis only, in COVID School Year 2, using tests that were not comparable to earlier years and could not be administered to those learning remotely; indeed, during 2022, many school boards called for tests to be cancelled (Teotonio, 2022). Though Nova Scotia and British Columbia have conducted some provincial assessments, and Alberta and Quebec governments supported sample-based assessments of student learning (personal communication), this has been a national issue. Where there have been large-scale, comparable assessments, the impact of the pandemic on student learning has been seen to be both serious and unequal (e.g., Kuhfeld et al., 2022; Patrinos, 2022). It

seems highly unlikely that the increase in grades this report shows over the two years of the pandemic mean a comparable increase in actual knowledge and skill development.

Teacher grading has always been a complex process that reflects a range of considerations beyond narrowly defined achievement, but grades are far from arbitrary; as a more holistic measure, they are typically more predictive of students' long-term outcomes than standardized tests (Brookhart et al., 2016; McMillan, 2005). The pandemic appears to have changed teachers' assessment practices, although how and why is not well-understood; the pandemic highlights a serious need for qualitative research to better understand the reasoning of educators and experiences of students, how they were defining success and their decision-making around postsecondary pathways and progress. A significant change in what grades represent about student achievement, and how they are being used, matters deeply. For better or for worse, conventions around grading are built into key educational processes like parent-teacher communication, the development of students' self-concept, identification of the need for additional supports, postsecondary admissions and scholarships. Ultimately, grading processes have implications for students' long-term human capital —in terms of future careers, future earnings and social well-being. These findings — not to mention growing calls from school boards, unions and others for a renewed approach to assessment (e.g., Gallagher-Mackay & Sider, 2022) — suggest a profound need for a public conversation about grades and measuring achievement at both the student and the system level. The extent to which grades are a proxy for knowledge and skills was disrupted by the pandemic, and while grades have increased — and those increases are perhaps a driver of increased affinity toward PSE — it remains to be seen how these students will manage new learning challenges in PSE, as well as how retention, progression and graduation will be affected.

This report also raises the question about what elements may have contributed to students' ability to progress through the pandemic. There are numerous reports about increased family understanding and participation in students' schooling because of the shifts to online learning; some of the flexibility in assessment and scheduling may have been beneficial for some students, offering new ways of showing what they know and can do. While the pandemic has offered many challenges, there are also potentially important positive lessons learned that should inform practice going forward.

Educational institutions need to better understand student progress. And, given the valid concerns that students may have learned less over the years of the pandemic and suffered significantly in terms of mental health, isolation and other aspects of well-being, institutions need to evaluate the need for and effectiveness of various educational supports. This means more, better and faster system-level data, about all stages of formal education, including postsecondary transitions. The need for better, faster public data is particularly acute at the provincial level given the legislative and funding responsibilities of

the provincial governments; comparable national data would also be extremely informative given the diversity of policy choices across Canada.

References

- Alphonso, C., & Wang, C. (2020, September 17). Ontario families living in more racialized neighbourhoods less likely to send children back into classroom, Globe analysis finds. *The Globe and Mail*. <https://www.theglobeandmail.com/canada/article-ontario-families-living-in-more-racialized-neighbourhoods-less-likely/>
- Andrabi, T., Daniels, B., & Das, J. (2020). Human Capital Accumulation and Disasters: Evidence from the Pakistan Earthquake of 2005 (Working Paper No. 20/039; RISE Working Paper). RISE. <https://riseprogramme.org/publications/human-capital-accumulation-and-disasters-evidence-pakistan-earthquake-2005>
- Averett, K. H. (2021). Remote Learning, COVID-19, and Children With Disabilities. *AERA Open*, 7, 23328584211058470. <https://doi.org/10.1177/23328584211058471>
- Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education* (3rd ed.). University of Chicago Press.
- Brookhart, S. M., Guskey, T. R., Bowers, A. J., McMillan, J. H., Smith, J. K., Smith, L. F., Stevens, M. T., & Welsh, M. E. (2016). A century of grading research: Meaning and value in the most common educational measure. *Review of Educational Research*, 86(4), 803–848.
- Brown, R. S. (2021). Mean grades for Grade 12 Year Students, 2006-07 to 2020-21: Toronto District School Board. Unpublished manuscript on file with authors.
- Brown, R. S., Davies, S., & Chakraborty, N. (2019). *The University of Toronto-Toronto District School Board cohort study: An introduction*. Toronto: 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: Toronto District School Board.
- Brown, R. S., & Tam, G. (2016). Research Brief 1: Historical trends of 10 cohorts. Toronto: Toronto District School Board.
- Brown, R. S., Walters, D., Parekh, G., & Conley, C. (2021). 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>

- Cameron, D., DeJesus, S., Presley, A., & Zheng, S. (2021). TDSB Pandemic Recovery Plan 2021-22: System views of student learning, March 2020-June 2021. Toronto: Toronto District School Board.
- Canadian Council on Social Determinants of Health. (2015). *A review of frameworks on the Determinants of Health*. Public Health Agency of Canada.
- Card, D. (1999). The Causal Effect of Education on Earnings. In *Handbook of Labour Economics* (Vol. 3A, pp. 1801–1863). Elsevier. [https://doi.org/10.1016/S1573-4463\(99\)03011-4](https://doi.org/10.1016/S1573-4463(99)03011-4)
- Chatoor, K., MacKay, E., & Hudak, L. (2019). *Parental education and post-secondary attainment: Does the apple fall far from the tree?* Toronto: Higher Education Quality Council of Ontario.
- Chmielewski, A. K., & Khan, O. (2020). Toronto’s rich neighbourhoods opt for in-person school. https://medium.com/@katyn_and_omar/torontos-rich-neighbourhoods-opt-for-in-person-school-8161dc6cc13b
- Choi, K. H., Denice, P., Haan, M., & Zajacova, A. (2021). Studying the social determinants of COVID-19 in a data vacuum. *Canadian Review of Sociology*, 58(2), 146–164. <https://doi.org/10.1111/cars.12336>
- Diemer, M. A., Mistry, R. S., Wadsworth, M. E., López, I., & Reimers, F. (2013). Best practices in conceptualizing and measuring social class in psychological research. *Analyses of Social Issues and Public Policy (ASAP)*, 13(1), 77–113. <https://doi.org/10.1111/asap.12001>
- Environics Institute, Future Skills Centre, & Diversity Institute. (2021). Lessons learned: The pandemic and learning from home in Canada (p. 26). Future Skills Centre. https://www.ryerson.ca/diversity/reports/Lessons-Learned_EN.pdf
- Finnie, R., & Mueller, R. E. (2008). The effects of family income, parental education and other background factors on access to post-secondary education in Canada. MESA. https://www.yorku.ca/pathways/literature/Access/MESA_Finnie_Mueller.pdf
- Gallagher-Mackay, K. (2020). Are students and educators learning during the pandemic. Policy Options. <https://policyoptions.irpp.org/magazines/november-2020/are-students-and-educators-learning-during-the-pandemic/>
- Gallagher-Mackay, K., & Brown, R. S. (2021a). *The impact of school closures and emergency remote learning on grade 12 students in spring 2020: Preliminary findings from Toronto*. Toronto: Higher Education Quality Council of Ontario.

<https://heqco.ca/pub/the-impact-of-school-closures-and-emergency-remote-learning-on-grade-12-students-in-spring-2020-preliminary-findings-from-toronto/>

- Gallagher-Mackay, K., & Brown, R. S. (2021b). *The impact of school closures and emergency remote learning on post-secondary transitions in 2020/21: Findings from Toronto*. Toronto: Higher Education Quality Council of Ontario. <https://heqco.ca/pub/the-impact-of-school-closures-and-emergency-remote-learning-on-postsecondary-transitions-in-2020-21-findings-from-toronto/>
- Gallagher-Mackay, K., Brown, R. S., & et al. (2021). *The Greater Toronto Area and Hamilton School Board Research Collaboration: Learning through COVID-19 Report #1: Enrollment and Absenteeism* (p. 14). Toronto: Toronto District School Board. <https://www.tdsb.on.ca/portals/default/archive/Portals/research/docs/School%20During%20the%20Pandemic/GTAHCollaborationReport1FINAL.pdf>
- Gallagher-Mackay, K., & Sider, S. (2022). *Educational recovery and reimagining in the wake of COVID-19: Principles and proposals from a multi-stakeholder workshop* (p. 24). Centre for Leading Research in Education/Wilfrid Laurier University. <https://researchcentres.wlu.ca/centre-for-leading-research-in-education/images/educational-recovery-and-reimagining-pdf1>
- Gallagher-Mackay, K., Srivastava, P., Underwood, K., Dhuey, E., McCreedy, L., Born, K. B., Maltsev, A., Perkhun, A., Steiner, R., Barrett, K., & Sander, B. (2021). *COVID-19 and Education Disruption in Ontario: Emerging Evidence on Impacts*. Ontario COVID-19 Science Advisory Table. <https://doi.org/10.47326/ocsat.2021.02.34.1.0>
- Georgiades, K., MacMillan, H., Georgiades, S., Waddell, C., Szatmari, P., Vaillancourt, T., & Gruenewoldt, E. (2021, February 22). Data gaps are fueling Canada's children's mental health crisis, during COVID-19 and beyond. *The Globe and Mail*.
- Georgiou, G. (2021). COVID-19's impact on children's reading scores: Data trends and complementary interview. *Reading League Journal*, May/June, 34–39.
- Goldhaber, D., Kane, T. J., McEachin, A., Morton, E., Patterson, T., & Staiger, D. O. (2022). The consequences of remote and hybrid instruction during the pandemic (p. 34). Centre for Education Policy Research, Harvard University. <https://cepr.harvard.edu/road-to-covid-recovery>
- Government of Ontario. (2010). *Growing success: Assessment, evaluation and reporting in Ontario schools*. Toronto: Ontario Ministry of Education.
- Halloran, C., Jack, R., Okun, J., & Oster, E. (2021). *Pandemic Schooling Mode and Student Test Scores: Evidence from US States* (No. w29497; p. w29497). National Bureau of Economic Research. <https://doi.org/10.3386/w29497>

- Hammerstein, S., König, C., Dreisörner, T., & Frey, A. (2021). *Effects of COVID-19-Related School Closures on Student Achievement—A Systematic Review*. PsyArXiv. <https://doi.org/10.31234/osf.io/mcnvk>
- Hanushek, E., & Woessman, L. (2020). *The economic impact of learning losses*. OECD. <http://www.oecd.org/education/The-economic-impacts-of-coronavirus-covid-19-learning-losses.pdf>.
- Hurley, J. (2022a, June 29). Should grades matter? Why this teacher is shaking up everything we know about report cards. *Toronto Star*. <https://www.thestar.com/news/gta/2022/06/29/should-grades-matter-why-this-teacher-is-shaking-up-everything-we-know-about-report-cards.html>
- Hurley, J. (2022b, October 29). An explosion in A+ students: Grades are rising in GTA high schools. *Toronto Star*. <https://www.thestar.com/news/gta/2022/10/29/an-explosion-in-a-students-grades-are-rising-at-gta-high-schools-heres-what-it-means-for-your-kids.html>.
- James, C. (2021). Racial inequity, COVID-19 and the education of Black and other marginalized students. In *Impacts of COVID-19 in Racialized Communities* (pp. 36–42). Royal Society of Canada. <https://rsc-src.ca/en/covid-19/impact-covid-19-in-racialized-communities/racial-inequity-covid-19-and-education-black-and>
- Jaume, D., & Willén, A. (2019). The long-run effects of teacher strikes: Evidence from Argentina. *Journal of Labour Economics*, 37(4), 1097–1139.
- Kuhfeld, M., Soland, J., & Lewis, K. (2022). Test score patterns across three COVID-19 impacted school years (EdWorking Paper 22-520; p. 29). Annenberg Institute, Brown University. <https://journals.sagepub.com/doi/full/10.3102/0013189X221109178>
- Kuhfeld, M., Tarasawa, B., Johnson, A., Ruzek, E., & Lewis, K. (2020). *Learning during COVID-19: Initial findings on students' reading and math achievement and growth* (p. 12). NWEA. <https://www.nwea.org/research/publication/learning-during-covid-19-initial-findings-on-students-reading-and-math-achievement-and-growth/>
- La Mattina, G. (2018). How persistent is the effect of conflict on primary education? Long-run evidence from the Rwandan genocide. *Economics Letters*, 163, 32–35.
- Mahboubi, P., & Higazi, A. (2022). *Lives put on hold: The impact of the COVID-19 pandemic on Canada's Youth*. C.D. Howe Institute. <https://www.cdhowe.org/public-policy-research/lives-put-hold-impact-covid-19-pandemic-canadas-youth>

- McCullough, K. (2022, May 25). McMaster University speaker Alfie Kohn says grades “kill curiosity” in students. *Hamilton Spectator*.
<https://www.thespec.com/news/hamilton-region/2022/05/25/alfie-kohn-ungrading-movement-mcmaster-university.html>
- McMillan, J. H. (2005). Secondary teachers’ classroom assessment and grading practices. *Educational Measurement Issues and Practice*, 20(1), 20–32.
- Ministry of Education. (2020). *Policy/Program Memorandum No. 164: Requirements for Remote Learning*. Toronto: Government of Ontario.
<http://www.edu.gov.on.ca/extra/eng/ppm/164.html>
- Ministry of Education and Early Childhood Development. (2022). *2021-2022 Nova Scotia Assessment: Reading, Writing and Mathematics in Grade 6*. Halifax: Government of Nova Scotia. <https://plans.ednet.ns.ca/results>
- National Academies of Science Engineering and Medicine. (2019). *Monitoring Educational Equity*. National Academies Press. <https://doi.org/10.17226/25389>
- National Student Clearinghouse Research Center. (2022). Current term enrollment estimates: Spring 2022 (CTEE). National Student Clearinghouse.
https://nscresearchcenter.org/wp-content/uploads/CTEE_Report_Spring_2022.pdf
- OUAC. (2022, June 15). Undergraduate application statistics. Ontario Universities’ Application Centre. <https://www.ouac.on.ca/statistics/ugrad-application-statistics/>
- Patrinos, H. (2022, January 19). The COVID-19 slide in education: New data on learning loss. *Education, Economics and Public Policy*. <https://hpatrinos.com/2022/01/19/the-covid-19-slide-in-education-new-data-on-learning-loss/>
- People for Education. (2021). Missing out – the visible and invisible loss of extracurricular activities. Toronto: People for Education. <https://peopleforeducation.ca/our-work/missing-out-the-visible-and-invisible-loss-of-extracurricular-activities/>
- People for Education. (2022). Pan-Canadian Tracker: Education strategies in response to COVID-19 (2021-2022). Toronto: People for Education.
<https://peopleforeducation.ca/pan-canadian-tracker-education-strategies-in-response-to-covid-19-2021-2022/>
- Post-Secondary Graduate Earnings. (n.d.). LMIC-CIMT. <https://lmic-cimt.ca/how-much-do-they-make/post-secondary-graduate-earnings/>
- Robson, K., Anisef, P., Brown, R. S., & George, R. (2018). Underrepresented students and the transition to postsecondary: Comparing two Toronto cohorts. *Canadian Journal of Higher Education*, 48(1), 39–59.

- Robson, K., Maier, R., Anisef, P., & Brown, R. S. (2019). *High school success and access to postsecondary education*. Toronto: Higher Education Quality Council of Ontario. <https://heqco.ca/pub/high-school-success-and-access-to-postsecondary-education/>
- Schultz, T. W. (1961). Investment in Human Capital. *American Economic Review*, 51(1), 1–17.
- Srivastava, P., Lau, T. T., Ansari, D., & Thampi, N. (2022). Effect of socio-economic factors on elementary school student COVID-19 infections in Ontario, Canada. MedRxiv Preprint. <https://doi.org/10.1101/2022.02.04.22270413>;
- Statistics Canada. (2017). *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. (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>
- Storey, N., & Zhang, Q. (2021). *A Meta-analysis of COVID Learning Loss*. Johns Hopkins University. <https://doi.org/10.35542/osf.io/qekw2>
- TDSB. (2020, October 14). *Update Re: Secondary Assessment, Evaluation and Reporting 2020-2021*. Toronto: Toronto District School Board. <https://www.tdsb.on.ca/News/Article-Details/ArtMID/474/ArticleID/1540/Update-Re-Secondary-Assessment-Evaluation-and-Reporting-2020-2021>
- Teotonio, I. (2022, May 10). Ontario moves ahead with standardized testing despite calls from some school boards to put EQAO on hold. *Toronto Star*. <https://www.thestar.com/news/gta/2022/05/10/ontario-moves-ahead-with-standardized-testing-despite-calls-from-some-school-boards-to-put-eqao-on-hold.html>
- Turcotte, M. (2015). *Political participation and civic engagement of youth* (Insights on Canadian Society). Statistics Canada. <https://www150.statcan.gc.ca/n1/pub/75-006-x/2015001/article/14232-eng.pdf>
- UCAS. (2022). Next steps: What is the experience of disabled students in education? Universities and Colleges Admissions Service in the UK; in collaboration with Pearson. https://www.ucas.com/file/610106/download?token=1kwt_gKE
- Underwood, K., van Rhijn, T., Balter, A.-S., Feltham, L., Douglas, P., Parekh, G. R., & Lawrence, B. (2021). Pandemic effects: Ableism, Exclusion and Procedural Bias. *Journal of Childhood Studies*, 46(3), 16–30.

UNESCO. (2021). *Understanding the impact of COVID-19 on the education of persons with disabilities: Challenges and opportunities of distance education*. United Nations Educational, Social and Cultural Organization.

<https://unesdoc.unesco.org/ark:/48223/pf0000378404>

Vaillancourt, T. (2021). Children and schools during COVID-19 and beyond: Engagement and connection through opportunity (p. 198). Royal Society of Canada. https://rsc-src.ca/sites/default/files/C%26S%20PB_EN_0.pdf

Wong, J. (2021, May 17). With summer vacation looming, educators worry about lasting fallout of pandemic schooling. *CBC News*.

<https://www.cbc.ca/news/canada/teacher-questionnaire-pandemic-yearend-1.6025149>