Tutoring in the time of COVID

The Evidence for Tutoring to Accelerate Learning and Address Educational Inequities During Canada's Pandemic Recovery

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Executive Summary

As the world struggles to respond to the COVID-19 pandemic, students and school systems continue to experience unprecedented disruption. All evidence suggests these disruptions are exacerbating pre-existing inequalities. Students living in poverty, students in racialized and newcomer communities, and students with disabilities experience greater burden of disease and more challenges accessing and benefitting from remote schooling and necessary supports. Yet we know that equitable access to education lays the foundation for full participation in Canada's economy and civic life and is a prerequisite for a more prosperous and inclusive society.

Around the world, tutoring programs are emerging as an important mechanism for addressing the widening gaps in educational outcomes associated with the COVID-19 pandemic. This review of the evidence on tutoring's effectiveness aims to provide policymakers and community stakeholders with key information to help them consider whether large-scale tutoring programs can form part of an effective educational policy response to the disruptions of the pandemic. We discuss the impressive evidence on outcomes of tutoring programs for students and society; what we know about tutoring in Canada; and national tutoring initiatives launched in other OECD countries. Overall, we show that tutoring is a cost-effective and impactful strategy through which to address the learning challenges associated with the COVID-19 pandemic.

Evidence on the effectiveness of tutoring

Tutoring is typically defined as one-on-one (1:1) or small group instruction that complements the work of classroom teachers. Classroom teachers plan, deliver, and assess learning activities for a large and diverse group of students to develop a wide range of skills, knowledge, and attitudes necessary for life. Tutoring plays a supplementary role, with several distinct advantages. These include the ability to customize instruction and provide detailed, timely feedback, as well as to generate personalized engagement, care, and mentoring, which is often less possible in large group settings. When tutors work with classroom teachers, they can provide just-in-time catch-up to allow students to fully take advantage of classroom instruction.

There is a substantial body of research pointing to the high absolute and relative effectiveness of tutoring and its benefits for both students and tutors. Several meta-analyses show that high-dose tutoring (tutoring offered several times a week), has a consistent, substantial, and positive impact on academic achievement for all students, especially those facing serious academic difficulties. Its effectiveness equals or exceeds that shown for many other educational interventions—including early childhood education, after-school and summer programs, curriculum reforms, and counselling—especially for boosting skills in literacy and numeracy.

Tutoring can be delivered in many different ways. Research suggests that several factors contribute to stronger outcomes for students, including: the background, training, and supervision of tutors; the setting in which tutoring is offered; the frequency and duration of tutoring; the age of students; and the use of structured curriculum. Key findings on program design from this review of evidence include:

> The strongest effects of tutoring programs are associated with tutoring delivered by certified teachers. Nevertheless, there is also strong evidence of high effectiveness for less-expensive paraprofessional tutors, such as teaching assistants, graduate students, and full-time college graduate tutors working through service programs.

> There is a strong relationship between the frequency of tutoring and academic outcomes. Tutoring offered three or more times a week is almost twice as effective as tutoring offered on a weekly basis or less. Attendance is another key factor.

> Tutoring appears to be effective at all ages. Most research focuses on literacy programs for young children, but there is strong evidence of impact—including increased graduation and greater school connectedness as well as better test scores—for high school students.

> A review of highly effective programs highlights the importance of program features such as formative assessments to monitor student learning, alignment with school curriculum, and formalized tutor training and support.

Much of the rigorous evidence on tutoring focuses on tutoring offered in school settings, with a remedial focus on literacy and numeracy. Based on this limited evidence, school-based programs have been found to be almost twice as effective as less frequently evaluated community-based tutoring programs. However, more research is needed on the impacts of different tutoring models, including those based in the community and after-school programs that integrate tutoring with nutritional, social, and physical activities.

There is growing interest in online delivery of tutoring, a phenomenon that was accelerated with the COVID-19 pandemic and is logistically simpler for volunteer tutors. Single studies on the effectiveness of digital delivery are mixed, with some offering considerable promise. Research on digital-only “intelligent tutoring systems” is conflicting.

Mounting evidence points to the benefits of tutoring for tutors themselves, with implications for broader society. In particular, programs that engage young people in service learning may improve the tutors' own academic competencies, professional skills (and thus career trajectories), longer-term civic engagement, and commitment to education and social equality.

Among educational interventions, tutoring has a relatively high short-term cost: a recent large-scale tutoring proposal in the United States estimated a per-student cost of US$1,450 for high-dose tutoring offered year-round by a full-time college graduate tutor working on an annual stipend of US$22,340. Nevertheless, cost–benefit analyses suggest it can be a very efficient investment in light of the positive impacts on lifetime earnings, reduced social costs associated with greater skill gain, and other educational successes. These can include increased secondary school graduation, as well improved access to and retention in post-secondary and vocational training.

Canadian experience

There is very little research on the extent and effectiveness of tutoring in Canada. There is very limited government support for tutoring, although both non-profit community and private tutoring are common here. We were able to identify 12 Canadian studies that looked at the effectiveness of tutoring, either as a free-standing program or an element of broader programs supporting student success, such as Pathways to Education and beyond 3:30, of which three used quasi-experimental evaluation designs. All of these studies identified positive effects associated with tutoring, including student and parent satisfaction and some degree of improved learning.

Internationally

This review of evidence has shown that large-scale tutoring programs are among the best investments governments can make to address widening educational inequalities and learning gaps among Canadian children brought on by the COVID-19 pandemic. For that reason, Australia, the Netherlands, the United Kingdom, and the United States have invested in large-scale tutoring programs to respond to pandemic-related educational disruptions, either as standalone initiatives or as part of a menu of approved options to close gaps and support students in accelerating their learning.

We highlight some of the different tutoring models adopted in international jurisdictions. For example, the Australian programs primarily employ certified teachers, while initiatives in the United States and the United Kingdom utilize paraprofessionals. In Australia and the Netherlands, governments have created a central directory of tutoring organizations eligible to be hired by schools, whereas in the U.K., a program of approved tutoring services was complemented with funding for school-based academic mentors. There were efforts in each jurisdiction to try to ensure that tutoring supports targeted the students with the greatest need—although in practice, there were challenges ensuring that goal was met.

A unique feature of large-scale tutoring initiatives in the United States is an emphasis on the use of national service programs, such as AmeriCorps, for staffing. Such a design can lower the cost of tutoring itself while creating wider benefits for youth through service learning.

While Quebec and Ontario have made small-scale investments in tutoring as part of their educational responses to the COVID-19 pandemic, Canadian provincial educational authorities have not taken the kind of large-scale, bold steps to mitigate learning loss that we have seen in other countries. Given the strong evidence base for tutoring, the time is ripe for a national conversation on its potential as a key part of enhanced strategies and investments on this urgent national issue.

Introduction

As students and educators see a return to classrooms and routines in the wake of the COVID-19 pandemic, attention has turned toward the best ways to respond to the tremendous educational disruptions wrought by the pandemic. This evidence review assesses tutoring as one type of intervention. Tutoring is typically defined as one-on-one (1:1) or small group instruction with fewer than five students that is intended to *supplement* classroom teaching (Guryan et al., 2021; Nickow et al., 2020). This review explores the potential of tutoring to address equity and learning gaps that have widened in the shadow of the COVID-19 pandemic. It is the result of a collaborative effort among teams at the University of Toronto, Wilfrid Laurier University, and the Diversity Institute at Ryerson University, with funding from the Future Skills Centre.

Canada's future skills agenda includes explicit attention to ensuring that all Canadians benefit from effective skills development. This means building an inclusive approach to supporting underserved groups such as women, youth, Indigenous peoples, newcomers, racialized people, LGBTQ2S+ people, persons with disabilities, veterans, and Canadians living in rural, remote, and Northern communities. A strong foundation in key academic and social skills is highly correlated not only with the fastest-growing sectors in the economy (Urban & Johal, 2020), but also with access to ongoing training (OECD, 2020).

A broad body of evidence indicates that the essential skills developed through schooling are important not only for students' immediate educational success and progression (Allensworth & Easton, 2007; Balfanz & Byrnes, 2020; R. S. Brown, 2006) but also for many aspects of their future lives: the capacity to enjoy a healthy life (Bushnik et al., 2020), active citizenship (Turcotte, 2015), and the ability to fully participate in and contribute to a fast-changing economy with rapidly evolving skills needs (Employment and Social Development Canada, 2019).

This evidence review is organized as follows: after a short summary of evidence on the impact of the COVID-19 pandemic on student learning and educational equity—supporting the case that we need to consider new investments in learning as part of pandemic recovery—this report is organized into four subsequent sections:

1. **Overview of the impacts of the COVID-19 pandemic on education in Canada:** This section highlights what we know about how educational disruption has exacerbated pre-existing inequalities in learning.

2. **Critical review of the evidence on the effectiveness of tutoring:** In this section, we focus on the strong and growing evidence that tutoring can be an effective response to learning gaps and inequality in educational outcomes. The primary emphasis of this section is on the benefits for students and the mechanisms that contribute to more effective programs. We also highlight existing evidence on the impacts of tutoring on tutors themselves, evidence that points to a positive cost–benefit relationship for tutoring, and areas where further research is needed.

3. **Tutoring in Canada:** This section highlights the wide variety of programs and relatively low levels of information about what tutoring services exist in Canada. It also reviews the limited evidence base on outcomes and effectiveness of tutoring interventions in Canada, which is further detailed in a descriptive table presented in the Appendix.

4. **International experiences with large-scale tutoring programs:** This section reviews national initiatives that provide access to tutoring in Australia, the Netherlands, the United Kingdom, and the United States. It looks primarily (though not exclusively) at initiatives launched in response to the educational disruptions of the COVID-19 pandemic. This section also provides information on smaller-scale tutoring initiatives introduced in Quebec and Ontario.

The Impacts of the COVID-19 Pandemic on Student Learning and Educational Equity

There has been a significant surge of interest in tutoring as a possible response to the COVID-19 pandemic, but, to date, the academic and policy discussions about tutoring have been quiet in Canada. Despite considerable evidence of shortages within the Canadian education context, there are significant concerns—and growing data corroboration—about the short-term and lasting impacts of the COVID-19 pandemic on Canadian students and education systems. In Canada, the main policy focus so far has been on managing risks for safe school operations in light of the pandemic (e.g., Science et al., 2021) and adapting delivery models. Yet the level of educational disruption in the wake of the pandemic, here as elsewhere, suggests an urgent need to go beyond "business as usual" in terms of pandemic *recovery*. This section provides an overview of these disruptions and the early evidence of impact and establishes the need for scaled-up supports for learning recovery.

At the peak of pandemic-related educational disruption, over 1.5 billion students were out of school globally. Even a year into the pandemic, almost half of the world's children were still affected by total or partial closures (UNESCO, n.d.). Education disruptions since March 2020 have included extended system-wide closures of face-to-face schooling—lasting between 8 and 26 weeks in different Canadian jurisdictions—and more localized closures. In some public health units in Ontario, closures amounted to 33 weeks between March 2020 and the end of June 2021 (Gallagher-Mackay et al., 2021).

Policy responses have largely focused on managing risks and adapting education delivery models. In Canada, these have included widespread shifts to remote learning, blended learning, as well as the use of cohorting and condensed academic programs. Students have had less face-to-face instruction and faced interruptions in extra-curricular and other activities that make up an important part of school life.

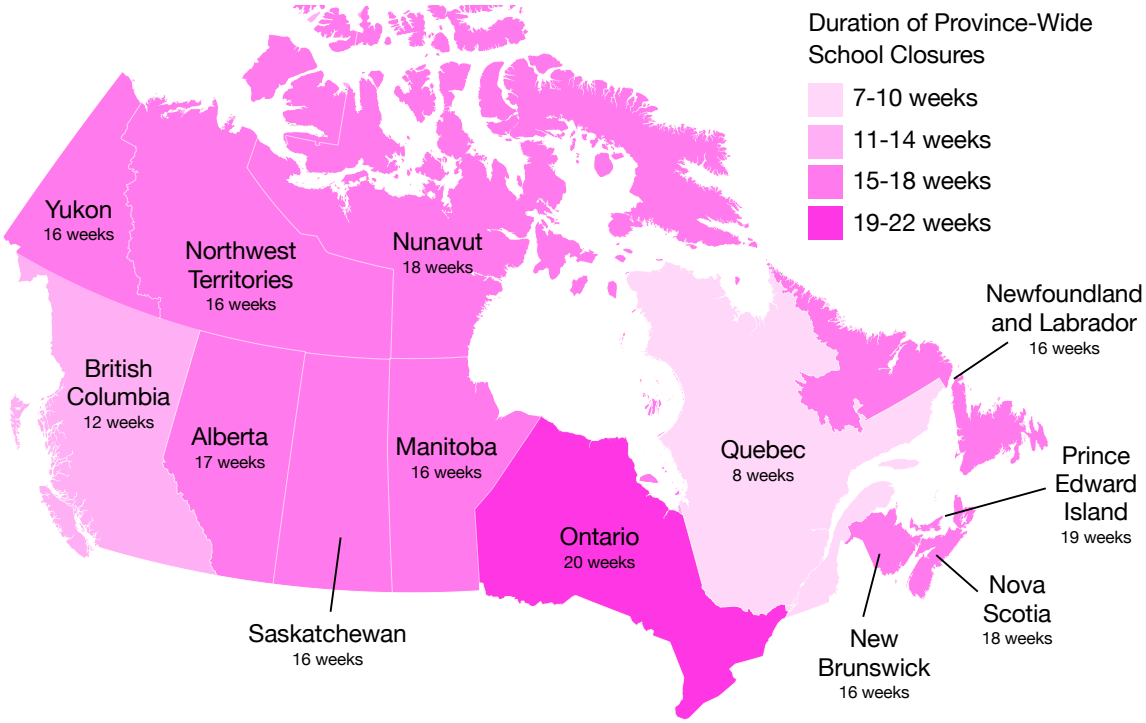
There is emerging evidence that these disruptions have had very significant impacts on many students' development of essential skills. A growing body of literature documents "substantial, multi-dimensional consequences of COVID-19-related education disruptions." (Gallagher-Mackay et al., 2021, p. 20) These consequences include depressed academic achievement—compared to students measured at the same time in previous years—as well as challenging mental health impacts, loneliness, lack of structure, and loss of a

sense of connection to school. In addition to impacts on long-term health and civic participation, these consequences have the potential to contribute to lower lifelong incomes for these students—and lower productivity and greater income polarization for the country as a whole—if left unaddressed.

Educational disruption has, of course, occurred alongside unequally distributed hardships beyond school walls that affect students' capacities to succeed at school. A growing body of evidence shows that the burden of illness, inability to work from home, crowded living spaces, and elevated mental health concerns are more common in low-income families. They have fallen disproportionately on racialized and Indigenous families, as well as on people with disabilities (Statistics Canada, 2021). Hardships at home have, in turn, affected students' educational opportunities both directly (in terms of factors like access to technology and the skills to use it), and indirectly (through the trauma experienced by children in strained households, and the availability of parents or other family members to support online and home-based learning).

FIGURE 1

Elementary school closures in Canada during the COVID-19 pandemic.



Note: School closures are defined as the suspension of in-school, face-to-face instruction. Only public school closures at the provincial or territorial level are presented, and information about blended/hybrid learning is not included.

Source: Gallagher-Mackay, K., Srivastava, P., Underwood, K., Dhuey, E., McCready, 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

Research from previous crises and contexts that led to substantive schooling disruption has demonstrated that educational losses tend to be cumulative, and that gaps in learning continue to grow over time (Andrabi et al., 2020). There are also risks that students with what could be short-term academic difficulties will end up streamed into programs perceived as easier, which tend to depress achievement and where racialized and low-income students are over-represented (Clandfield et al., 2014; James, 2020; James & Turner, 2017; People for Education, 2014).

Another concern, especially for older students, is that they may experience a loss of "school connectedness." Connectedness is positively associated with a number of predictors of well-being, such as "higher self-esteem and life satisfaction, lower rates of substance use and violence, participation in fewer risk-taking behaviours, increased likelihood of completing secondary school, and greater feelings of positive mental health" (Dove et al., 2020, p. 14). In relation to this, school closures may trigger social isolation and loneliness for children and youth, which is associated with emerging mental health challenges (Loades et al., 2020). Recent research suggests extended remote schooling has been associated with clinically significant mental health difficulties in as many as half of children in a survey of 1,000 Ontario students (Korczak, personal communication, July 8, 2021).

Finally, in Ontario, even though policies such as a marks freezes and public commitment that all students should graduate actually produced an increase in graduates in 2020 (Gallagher-Mackay & Brown, 2021), experts have expressed concerns that students affected by these education disruptions will be more likely to drop out (Bailey et al., 2021). Affected students may also defer college (in particular) or university, making it less likely they will access post-secondary education at all (Bailey et al., 2021).

Overall, efforts to track the impact of the pandemic in Canada suffer from an acute shortage of data, falling far short of UNESCO's data standards (see Gallagher-Mackay et al., 2021). However, even with limited data, it is a conservative assumption that students' learning, school connection, and well-being have indeed been deeply compromised by the COVID-19 pandemic (e.g., Dove et al., 2020).

Apart from the impact on students, educational disruption has had a major impact on teachers' work and well-being (see, e.g., Canadian Teachers Federation, 2020; Pressley, 2021). Mid-pandemic, teachers had to dramatically change how they teach, with limited time or specific training provided. Many faced additional responsibilities, including supporting students (some of whom were under exceptional stress) across multiple learning platforms. Operational rules designed to improve school safety added significant work, and there was stress associated with working in conditions many educators considered dangerous. As a highly feminized workforce, many had to juggle the challenges of teaching students remotely while having responsibility for their own children learning at home. Reports of stress and burnout were high, and many teachers

expressed concern that they had not been able to cover all of the curriculum and feared many of their students had fallen far behind and risked being unable to catch up (Wong, 2021). During the recovery period, it is anticipated that teachers will face exceptional challenges, including widening gaps in students' academic performance arising from disruptions, increased pressure to support social-emotional learning in equitable ways, and a demand for activities to rebuild school connectivity and experiential learning (e.g., Hawkins, 2021). To date, there has been little discussion of any additional resources to meet these enhanced demands.

The serious nature of educational harms suffered by students, and the ensuing growth in educational gaps along socioeconomic and demographic lines, strongly suggests the need for a pandemic recovery response that will help proactively mitigate learning losses and support students in resuming pathways that lead to better life outcomes.

Review of Evidence on the Effectiveness of Tutoring

An evidence-based approach to educational recovery in the wake of the COVID-19 pandemic requires an assessment of the relative effectiveness of known interventions, an understanding of how and why they are effective, a consideration of the possible differences in delivery models, as well as an assessment of the relative costs of a given policy choice. There is a substantial body of research pointing to the high absolute and relative effectiveness of tutoring and its benefits for both students and tutors. Despite its relatively high absolute cost (among interventions), cost–benefit analyses suggest that tutoring can be a very efficient investment. In the next section—the heart of this paper—we examine the evidence in support of tutoring as an appropriate intervention to address significant learning gaps. It should be noted, however, that most high-quality evidence on tutoring is international, primarily American. In the subsequent section, we zoom in on the limited Canadian evidence available.

Tutoring compared to other interventions

Several reviews that compare a large number of potential interventions highlight tutoring as being among the *most effective* educational

A note on evidence of effectiveness

Evidence-based policy making favours reliance on a *body* of evidence, rather than single studies. Yet there are often differences in how individual studies report their findings. In order to combine findings across many studies, a technique that has grown in popularity since the 1980s is the quantitative meta-analysis, where effects on defined outcomes are converted to a common statistical measure. For example, an "effect size," (ES) can be expressed in standard deviations: ES 1.0 is a difference of one standard deviation, which can be the equivalent of two or three years of schooling, depending on grade, subject, outcomes, etc. In education, *most* interventions have a positive effect, but in many cases, the size of those effects may not be important. Across many meta-analyses of diverse educational strategies and interventions, the *mean* effect size is between 0.22 and 0.27. Although meta-analysis, as a technique, tends to be narrow and ignore context, it provides a useful empirical starting point for policy decisions that involve comparisons across disparate options.

Sources: Glass, 1977; Hattie, 2009; Hill et al., 2008

strategies (another being, typically, comprehensive school reform approaches, which often include tutoring). For example, a meta-analysis of 101 experimental or quasi-experimental studies that looked at the impact of different educational interventions on the academic achievement of students with low socioeconomic status in OECD countries found that tutoring was the most effective intervention, with an average effect size (ES) of 0.36 standard deviations (Deitrichson et al., 2017). This analysis demonstrated that tutoring outperformed other educational interventions, including incentives (ES 0.01), after-school programs (ES 0.02), summer programs (ES 0.03), coaching students (ES 0.04), psychological interventions (ES 0.05), professional development for educators (ES 0.07), simply adding resources (ES 0.08), computer assisted instruction (ES 0.11), curriculum changes (ES 0.16), cooperative learning (ES 0.22), small group instruction (ES 0.24), and feedback and progress monitoring (ES 0.32) (Deitrichson et al., 2017).

Similarly, Ronald Fryer (2016) conducted a search for all randomized field experiments in education in highly developed countries that used standardized literacy and mathematics outcomes (including early childhood, school-based, and home-based interventions), ultimately identifying 196 studies. Upon analyzing this dataset, he highlighted "high-dosage" tutoring (at least three days a week, or 50+ hours in a 36-week period) as the school-based intervention that tends to have a consistently large impact (Fryer, 2016, p. 106), including for adolescents.

John Hattie's highly influential *Visible Learning* research synthesis combines findings from 1,400 meta-analyses of an extremely wide variety of student, home, and school factors that can affect educational outcomes (Hattie, 2009; n.d.). Hattie identifies volunteer tutoring as being likely to have a positive impact on student achievement (ES 0.26) and peer tutoring as having potential to accelerate student achievement (ES 0.56) (Hattie, 2009; n.d.). Other comparative studies also rank tutoring as one of the most effective approaches to promoting student achievement (Neitzel et al., 2021; Pellegrini et al., 2021).

Understanding the effectiveness of tutoring

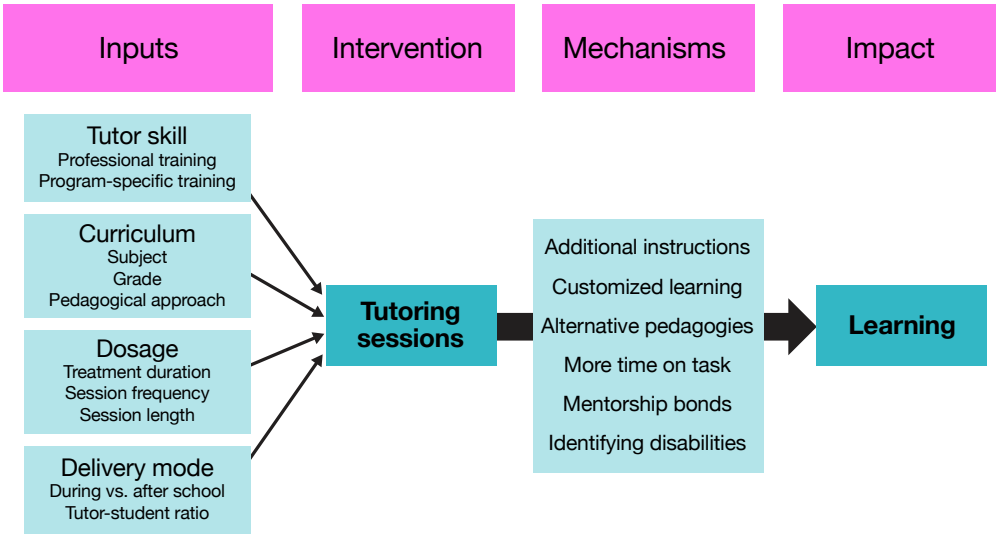
What factors contribute to the effectiveness of tutoring? First, it is important to underline the key insight that tutoring is complementary to, and distinct from, the more complex work of classroom teachers. Classroom teachers, as highly skilled professionals, are required to plan, execute, and assess diverse learning activities to help students develop a range of skills, knowledge, and attitudes over extended periods of time. Moreover, the work of teachers occurs within and beyond the classroom: they are typically working with a large group of students, building relationships with them and their families, and contributing to the larger school community in many different ways. The tutor's role is more limited, but can provide distinct benefits alongside—in no way replacing—the work of teachers.

The research literature highlights tutors' capacity to *customize* what students learn, addressing individualized needs (Elbaum et al., 2000). Where tutoring is linked to what is happening in class, this customization can also allow the tutor to address just-in-time gaps in knowledge or skills to help students take advantage of regular instruction that could otherwise be inaccessible to those lacking key background (Ander et al., 2016; Cook et al., 2014; Nickow et al., 2020). Other hypotheses include that one-on-one or small group settings, typical in tutoring programs, may allow more continuous participation and demand students' attention in ways that make the learning time more effective than in larger class settings. There is an opportunity for more specific and timely *feedback* on student learning, which is known to be one of the most effective ways to enhance learning, but which can be very challenging to deliver in a large group environment.

Although theory supports the idea that caring relationships are at the foundation of tutoring success (Slavin, 2018), most of the evidence base for tutoring is focused on academic outcomes, leaving the role of relationships in tutoring under-researched. A useful analogy might be drawn from mentorship experiences. Mentorship is defined as a developmental relationship, established for the growth, learning, or advancement of the mentee (Dominguez, 2017). It is clear that tutoring has elements in common with mentorship, but is specifically focused on academic instruction. The literature on tutoring and mentoring is quite separate; while there is likely overlap among the two approaches, some have noted a possible tension between task-focus and relationship-focus in some tutoring relationships (see, e.g., National Mentoring Resource Center, n.d.).

FIGURE 2

Analytical model of variables (inputs and mechanisms) that contribute to the impacts of tutoring on learning



Source: Adapted from Nickow, A., Oreopoulos, P., & Quan, V. (2020). *The impressive effects of tutoring on PreK-12 learning: A systematic review and meta-analysis of the experimental evidence* [NBER Working Papers No. 27476]. National Bureau of Economic Research. https://www.nber.org/papers/w27476

Findings about tutoring's effectiveness rest on decades of research that have consistently concluded that tutoring can be a highly effective approach to supporting learning. An influential synthesis from the early 1980s concluded that tutoring had positive effects on student achievement and attitudes towards the subject matter and was also beneficial for the tutors (Cohen et al., 1982). During that period, the research around tutoring began to wrestle with how to balance the high educational benefits with the relatively high cost of small groups (Bloom, 1984). Since then, the literature has grown both broader and deeper.

In 2020, Nickow, Oreopoulos, and Quan produced a meta-analysis that synthesized 96 studies covering all types of tutoring programs for which there was experimental research. Their main finding was that experimental research on tutoring shows a consistent, substantial, and positive impact of tutoring on academic achievement, with an effect size estimated at ES 0.37 (see p. 7). A statistical analysis concluded that the effect of tutoring was roughly akin to the difference in academic achievement between students in the 50th and 66th percentiles. Notably, these effects were consistent for students with greater academic difficulties (e.g., students who had been held back, or were three years behind grade level).

Acknowledging that tutoring practice and settings are extremely diverse, this study was able to reach conclusions on a number of key elements associated with tutoring effectiveness. Because it is directly relevant to this paper, and synthesizes much recent, rigorous work on tutoring, the next sections rely heavily on the meta-analysis by Nickow and colleagues (2020). Nonetheless, their study does have some important limitations that should be acknowledged before diving more deeply into its results. As the authors themselves recognize, rigorous experimental evaluations tend to focus more on formalized programs and, specifically, those offered in schools. Among such programs, there is a disproportionate focus on early reading and, to a lesser degree, numeracy. It is not clear that the structured, school-based programs typically subjected to experimental research represent the majority of tutoring activity in North America. For example, a companion study to this evidence review, which builds an ecosystem map of the tutoring landscape, suggests that, in Canada, tutoring is usually (in 87% of organizations surveyed) offered integrated with other program elements such as mentorship, youth leadership, or play-based programming (Yau et al., 2021). Some research suggests that these multi-dimensional programs are effective precisely *because* they combine different components, though they have not been evaluated using rigorous experimental or quasi-experimental research designs (e.g., Deller, 2018; Quint et al., 2013).

Furthermore, like other similar analyses, Nickow and colleagues focus on short-term academic outcomes, typically test scores in literacy and numeracy. Outside of the literature focused on *peer tutoring* (see, e.g., Dion et al., 2005; Song et al., 2018), there is little available analysis of outcomes relating to social-emotional learning, executive function, or well-being. Peer tutoring studies were not included in Nickow and colleagues' study. Even rarer is information about

longer-term outcomes, such as graduation rates and post-secondary access, careers, and other aspects of adult life. Scholars who study lifespan outcomes for other educational interventions (from teacher effects to early childhood education), have suggested that test scores are not necessarily the best measure of outcome, as they under-weigh factors and processes that shape longer-term outcomes (R. F. Ferguson et al., 2015).

Finally, due to the nature and scope of their analysis, the Nickow review provides limited information on key aspects of program design and implementation contexts that may contribute to outcomes. For instance, curriculum content, different types of activities, the nature of communication with classroom teachers or families, and combinations of interventions (e.g., combining nutrition, cultural, or sport activities with tutoring programs) are all features of tutoring programs operating in Ontario. And, as is true across most of the literature on tutoring, the Nickow study does not discuss the potential benefits of tutoring to the tutors themselves.

Background of tutors

Nickow and colleagues distinguish between three types of service providers: trained teachers, paraprofessionals, and volunteers. The latter two categories are quite heterogeneous. *Paraprofessionals* by definition have some substantial connection to schools and/or training in education and include teaching assistants, teacher education students, graduate students in education, trained research team members, or those in post-graduate service programs such as AmeriCorps. *Volunteers* include undergraduate students as well as more general community members, retirees, and other individuals not necessarily related to the education sector.

The study found that the strongest positive effects, on average, arose from tutoring provided by qualified teachers with specialized training (ranging from ES 0.56 for a large-scale program to ES 1.29 in an experimental setting). A similarly structured teacher-led program, Math Recovery, also had very strong positive effects for numeracy.

However, a series of different meta-analyses from Johns Hopkins University came to a contrary conclusion, finding limited differences in the outcomes of tutoring delivered by paraprofessionals or paid volunteers (e.g., AmeriCorps) and teachers (Baye et al., 2019; Neitzel et al., 2021; Pellegrini et al., 2021).

The Nickow study found that volunteer tutors, collectively, had the most inconsistent impact on student achievement. Still, a different 2009 meta-analysis specifically examined the impact of volunteer tutoring in 28 experimental and quasi-experimental studies and found that volunteer-based tutoring had a reasonably strong effect (ES 0.23) on student performance (Ritter et al., 2009). There were few differences between parent volunteers, college students, and adult community volunteers. The small number of highly structured programs in this earlier study were considerably more effective than less structured ones.

Dose/frequency

A strong relationship between tutoring frequency and improvements in learning outcomes is found consistently across several studies. As noted above, Fryer's findings about the relatively high effectiveness of tutoring was limited to "high dosage" (three times or more a week) tutoring programs. Programs delivered with less frequent sessions (once a week or less) had about half the impact (Fryer, 2016). Nickow and colleagues also found that the effect of tutoring on learning increases with the number of sessions per week, and that there was relatively little evidence that tutoring offered only once a week generated significant effects. There was not a clear difference between tutoring programs operating three times a week compared to those offered four or five times a week. The *length* of tutoring sessions did not appear to be as relevant—sessions ranged from 20 minutes to an hour, typically—and the authors hypothesize that the optimal length of sessions may vary considerably by age of student (Nickow et al., 2020).

Evaluated programs also showed relatively strong effects over a fairly limited duration of less than five months. For example, in Italy, a tutoring program that utilized university student volunteers achieved significant effects on learning in only three months (Carlana & Ferrara, 2021; see also Gersten et al., 2015). Nickow and colleagues observed that there was an apparent paradox: programs with durations greater than 20 weeks appeared to be less effective. They speculate that this is because most teacher-delivered programs, which they found to be more effective, tend to be shorter.

Age of students

Most empirical studies of tutoring focus on early grade reading interventions. In a rapid evidence review conducted by a group at Brown University's Annenberg Institute, researchers found that 148 of 203 tutoring evaluations looked at literacy interventions in the early grades (Robinson et al., 2021). Students at the beginning of elementary school appear to experience the greatest learning gains, especially in reading, while math tutoring programs tend to be more effective in older elementary and middle school years (Nickow et al., 2020).

One evaluation of a program that targets secondary-level students provides suggestive evidence that tutoring can also be effective at this level. An evaluation of the Saga tutoring program, which matches high school students with paraprofessional AmeriCorps tutors for intensive 1:2 math tutoring for 50 minutes every school day, showed major gains in both academic grades (ES 0.50) and standardized math test scores (ES 0.20–0.30) (Cook et al., 2014). The program was subsequently scaled up, and a five-city, multi-site evaluation showed only limited loss of efficacy (Guryan et al., 2021). Furthermore, Fryer (2016) notes that tutoring was one of the *only* interventions for adolescents in his meta-analysis that showed strong evidence of effectiveness on academic achievement measures.

Setting: School-based or community-based

A major limitation of the literature on tutoring effectiveness is the relatively limited number

of studies that met rigorous methodological inclusion standards and actually evaluated community-based programs as opposed to school-based ones. **It would be a significant contribution to the literature to develop a body of high-quality studies that look at common outcomes, including literacy and numeracy gains, in after-school and community settings.**

Nonetheless, some suggestive evidence exists. Nickow and colleagues found that, in the aggregate, during-school tutoring programs had twice the effectiveness of after-school tutoring programs.[1] They noted, however, that all the after-school tutoring programs in their sample were run by volunteers or paraprofessionals, not teachers, making it difficult to draw definitive conclusions about the impact of program setting that are independent of the impact of the type of tutor (Nickow et al., 2020). In addition to differences in personnel, after-school programs featured less frequent sessions and experienced greater absenteeism, both of which have been shown to have considerable impacts on effectiveness.

One exception to the general lack of studies on after-school tutoring is the literature on a U.S. national program of after-school "supplementary educational services" (SES), of which tutoring was a major part. Funded under Title 1 of the *No Child Left Behind Act*, schools that did not meet adequate yearly progress targets were required to offer curriculum-aligned SES through contracts with community or for-profit providers, approved by state governments. A similar model was adopted by England in 2020 (discussed in more detail in a later section of this review). Although US$2.5 billion was allocated to the initiative, it was marked by low demand. Nationally, at its peak, only 23% of eligible students signed up; students who faced greater educational disadvantages were less likely to enroll, and attendance was a chronic problem that worsened throughout the school year (Heinrich et al., 2010). Evaluations of SES programs, though required by law, were often not conducted or were of low quality (U.S. Government Accountability Office, 2006). States faced difficulties implementing the federal mandate to provide SES, such as restrictions that limited school boards from offering their own programs or establishing requirements for contractors (Sunderman, 2004). An analysis of those evaluations that used control groups found a positive and significant—but small—impact for participating students, with considerable variation (Lauer et al., 2006).

Training of tutors

It is intuitive that the level of training and support that a tutor receives would be related to their effectiveness in the role, particularly when tutoring is being offered by paraprofessionals or volunteers. Although several evidence syntheses comment on the variable levels of training and support offered under different tutoring programs, there do not appear to be any findings about the effect or type of training that make the greatest contribution. Typically, programs that have intensive training for

1 The pooled effect size for in-school programs is roughly one standard deviation, and for after-school programs, roughly two-fifths of a standard deviation.

paraprofessionals or are staffed by teaching professionals appear to be more likely to see significant and large effects, but there has been no analysis to quantify this tendency.

Degree of structure

There are a number of ways in which a tutoring program can be more or less structured, including through the use of a prescribed curriculum, leveled activities (i.e., based around materials or tasks that provide an ordered progression of increasing challenge), scripted lesson plans, and routine assessment of student progress. Except for Ritter's (2009) observation, based on three studies, that more formalized programs were more likely to be effective, there are limited findings around what Nickow and colleagues (2020) described as the "black box" of tutoring delivery.

Similarly, none of the meta-analyses found ways to quantify the nature and impact of supervision of tutors. The U.S. Institute of Education Sciences produced a handbook on how to structure out-of-school-time activities for academic improvement, but the quality of evidence for all their (quite generic) recommendations was low, according to their own evaluation. Recommendations included that tutors assess students' learning needs and individualize the programming being offered (Beckett et al., 2009).

However, based on their review of programs that were considered highly effective, Robinson and Loeb (2021) drew inferences to suggest that key elements of quality programs, beyond frequency, include "a stated focus on cultivating tutor-student relationships; use of formative assessments to monitor student learning; alignment with school curriculum; and tutor training and support" (p. 3).

Digital and online tutoring

It is difficult to assess the impact of digital and online tutoring per se because a wide variety of activities can fall under these categories. Based on extensive fieldwork and detailed analysis of outcomes, Burch, Good, and Heinrich (2016) have identified several very distinct variations in the respective roles of digital platforms, curriculum, and tutors, all of which fall into a broad general definition of "digital tutoring". They found that tutoring with very limited synchronous, face-to-face interaction was associated with lower achievement and was more commonly assigned to students with disabilities and English language learners.

A number of single studies look at the impact of online tutoring in which a tutor works directly with a single student through an online, two-way, synchronous interface. This type of interaction has been a dominant delivery model for tutoring for the duration of the pandemic. It is logistically simpler than in-person tutoring, particularly for volunteer-based models. In one Italian intervention set up during the period of initial pandemic-related school closures, a high school student was assigned to a volunteer undergraduate tutor. Despite a relatively short time frame, randomly assigned participating students outperformed a control group by a significant margin (ES 0.26), with stronger positive effects for low-income students, as well as positive

impacts on students' self-reported well-being (Carlana & Ferrara, 2021). In contrast, a British study of 600 students that compared the experiences of struggling students working with math-specialist offshore tutors working online with the experiences of struggling students who continued business as usual found that the online tutoring had essentially no effect (ES -0.03). Notably, business as usual *may* have included in-person tutoring for some of the students (Torgerson et al., 2016).

Tutoring can effectively boost the power of online learning activities: Roschelle and colleagues (2020) used randomized methods to test a group of 148 American students from four school sites, 40% of whom were learning English. One group received tutoring from experienced math teachers for 10 weeks and played an online game. The ability of this group to learn fractions was compared to that of a second group of students who only played the game, but did not receive tutoring. The tutored students outperformed those in the game-only group by a startlingly large margin (ES 0.47).

Several meta-analyses examine the effectiveness of digital tutoring programs that fit broadly into the category of "intelligent tutoring systems," that is, computer-assisted learning using software that may be engaged at various points before a student has reached an answer (i.e., question selection, prompts, etc.). Three studies found that intelligent systems were relatively ineffective at producing learning gains, contributing small gains relative to regular classroom instruction alone and performing worse than tutoring (Slavin et al., 2009; Steenbergen-Hu & Cooper, 2013; What Works Clearinghouse, 2009). In contrast, one study by Kulik and Fletcher (2016) found strong positive effects for a narrower range of intelligent tutoring systems.

Overall, the evidence related to online tutoring is not yet mature, and more research is needed on key variables, such as the use of machine learning and artificial intelligence, and more mundane factors such as whether students use their cameras or microphones versus camera-off/chat-only conditions. The COVID-19 pandemic has pushed many face-to-face tutoring programs online, and it will be important to evaluate and understand lessons learned from this experience.

Alternative models: Peer tutoring and private tutoring

Peer tutoring can be understood as a variation on co-operative learning (Slavin, 1980), and includes both in-class and cross-age tutoring programs in which students assist each other with mastering material. There are many individual studies that show this strategy is associated with positive outcomes—including improvements in reading, motivation, and behaviours—for tutors, students, and teachers. It has positive outcomes at both elementary and secondary levels and has a positive track record for students identified with special education needs (see, e.g., Fuchs et al., 2000; Okilwa & Shelby, 2010; Stenhoff & Lignugaris/Kraft, 2007).

Another significant alternative model of tutoring is the for-profit model, where

tutoring is a service, typically paid for by a student's parents. This form of tutoring is often provided after school. There is substantial literature on the proliferation of for-profit tutoring globally and within Canada as a form of "shadow education" that runs parallel to mainstream education, mimicking (and sometimes extending or altering) the shape, size, and curriculum of the official school system (Aurini et al., 2013; Bray, 2009). Nonetheless, the majority of research on the *effectiveness* of tutoring is focused on non-profit community- and school-based services that target students who need additional academic support. Much of the scholarship around the trend toward for-profit tutoring focuses on the drivers and structural features of the private tutoring market, as well as its system-wide educational and socioeconomic effects (Aurini et al., 2013; Bray, 2009, 2017; Davies & Aurini, 2006; Exley, 2021; Hallsén & Karlsson, 2019; Jansen et al., 2021; Kim et al., 2021; Liu & Bray, 2017). In this sense, research tends to highlight the political economic elements of the expansion and institutionalization of the private tutoring industry, as well as the role played by shadow education in maintaining or exacerbating inequality in favour of those who can afford it, rather than investigating its effectiveness.

Most families assume that private supplementary tutoring yields positive results on academic achievement, but the empirical evidence on its effectiveness is ambivalent and inconclusive, for a number of reasons (Bray, 2014; Byun, 2014; Choi & Park, 2016). First, there is great variation in the definitions of private tutoring and shadow education, and thus in the study parameters employed by different researchers to study its effectiveness. Just as with non-profit tutoring, there is significant diversity in private tutoring approaches, ranging from one-on-one instructional coaching to franchised learning centers and large classes in cram schools, with varied frequency, content, and quality of instruction. There are also difficulties in measuring student progress and accounting for selection biases, since the likelihood of using private tutoring and the purpose of seeking tutoring varies by family socioeconomic status (e.g., most evaluated non-profit tutoring initiatives tend to be remedial in orientation, versus driven by a push to optimize high achievement or enrich learning). A final reason for the mixed evidence base is that in contexts where teachers are poorly paid, shadow education might have a subtractive, rather than supplementary impact on learning, with public school teachers reducing classroom efforts and offering fee-paying tuition on the side.

The literature addressing the effectiveness of shadow education in the North American context is scant, and no study analyzing this dimension in a specifically Canadian setting was found. Internationally, a number of studies based on population data, large-scale surveys, and longitudinal panels have tended to show that students who received private supplementary tutoring achieved better outcomes than those who did not (Byun, 2014; Choi, 2018; Choi & Park, 2016; Guo et al., 2020; Ha & Park, 2017; He et al., 2021; Hof, 2014; Loyalka & Zakharov, 2016). However, these effects are not universal

(Dang & Rogers, 2008; Jansen et al., 2021; Liu & Bray, 2017). When observed, impacts tend to be mixed, varying by a student's socioeconomic status, gender, grades, and baseline achievement levels, as well as by the type of tutoring received and its timing in the school year. Effects might also include non-cognitive outcomes, such as stress relief, even in the absence of effects on achievement (Guill et al., 2020). This mixed empirical picture supports the argument that there is no simple, straightforward answer to the question of "does it work?" when it comes to shadow education. Its impacts on learning are context-specific and depend on the type, quality, and quantity of private supplementary tutoring provided; the subject areas covered; the frequency and intensity of tutoring; as well as the students' and families' characteristics and circumstances (Bray, 2014; Park et al., 2016).

Benefits to tutors

As noted above, most research on tutoring interventions has focused on outcomes for students and not on the impacts of tutoring on the tutors (Robinson, C. & Loeb 2021). However, diverse literature suggests that there are likely benefits, particularly for peer tutors and tutors who are volunteers.

For example, research shows that volunteering, especially when it involves local communities or work with young people, is highly correlated to reports of satisfaction and well-being. It may also lead to more community engagement in the future (Appau & Awaworyi Churchill, 2019; Borgonovi, 2008; K. M. Brown et al., 2012; Enjolras, 2015; Son & Wilson, 2012).

Studies of peer tutoring and child-to-child academic support programs also suggest that strong benefits accrue to tutors involved in peer tutoring. These include changes in well-being, self-confidence, academic achievement, and executive functioning (Galbraith & Winterbottom, 2011; Leung, 2019; Mundy et al., 2014; Vaghela et al., 2021).

These findings are reinforced by large-scale studies of educational programs involving volunteers including, for example, an evaluation of Teach For All, a U.S.-based program that places thousands of recent university graduates in schools as part of a national service program. These national service paraprofessionals not only report improved satisfaction and self-efficacy, but also go on to hold stronger beliefs about social equality. They engage more frequently in promoting and leading community/national policies and programs designed to ensure social equality and improved education (Mo & Conn, 2018). Similarly, studies of the extended service-learning associated with Saga Education's tutoring initiative, which partners with AmeriCorps to provide tutors, suggest benefits to both students and tutors. Furthermore, potential economic benefits may extend beyond tutors and students themselves. For example, a study of National Service Programs in the United States found that every dollar invested in full-time youth service programs—including, but not limited to tutoring programs—produced almost four dollars in benefits from higher wages in alumni, direct output, and community gains (Belfield, 2013).

Overall, these studies suggest that it is likely that volunteer and university student tutors experience a range of positive outcomes, including in social, academic, career, and civic aspects of their lives. More research is needed to understand such outcomes of volunteer tutoring programs in Canada.

Cost–benefit studies of tutoring

The key challenge in scaling tutoring initiatives is concern about the potentially high costs of delivering one-on-one and small group tutoring. Costs vary tremendously depending on policy decisions such as student eligibility and coverage of the program (i.e., universal or targeted, cut-off levels of need), frequency and length of sessions, size of groups, and qualifications of the tutors. Costs are greatest when using teachers and less when using volunteers—though there remains a significant cost associated with the management of tutoring programs even for volunteer-based programs. For example, costing for a recent large-scale tutoring proposal in the United States estimated a per student cost of US$1,462 for a full-time college graduate tutor working on an annual stipend of US$22,340 (cost to employer closer to US$30,000) (Kraft & Falken, 2020, p. 22).

Nevertheless, cost–benefit analyses that look at the individual and social benefits of tutoring—including the higher lifetime earnings and lower health and social services costs associated with greater educational successes—suggest that the return on investment from high-frequency tutoring is significant. A recent exploratory synthesis of cost–benefit analyses in education attempts to illustrate how benchmarks could allow value-for-money comparisons between educational interventions. The findings suggest that the cost expense ratio for adult tutoring may be greater even than the benefits of early education programming modeled on the iconic Perry Preschool Project, though the paper also makes clear how deeply assumption-driven such estimates can be (Harris, 2009).

Furthermore, as noted above, there may be additional cost–benefit advantages to tutoring programs designed on a youth service model through the lifetime earning gains and contributions of young people gaining this pivotal work/service opportunity (Belfield, 2013).

Conclusions on the effectiveness of tutoring

This summary of the evidence related to the effectiveness of tutoring points to a number of key conclusions:

- High-dosage tutoring—as a complement to regular classroom instruction led by qualified teachers—is one of the most effective educational interventions. Robust evidence suggests that it leads to major academic gains for students, including those who face significant challenges.
- Most of the evidence on tutoring focuses on test score gains, but there are a number of individual studies that suggest it can also boost students' connection to school and social-emotional well-being.

- There are numerous variations in how tutoring is delivered, which affect outcomes. The strongest evidence is for teacher-delivered, in-school programs, such as Reading Recovery, but high-dosage programs delivered by paraprofessionals such as educational assistants, education graduate students, or full-time youth corps volunteers also have very strong outcomes.
- The frequency, or dosage, of tutoring is one of the most important factors: tutoring delivered at least three times a week has almost double the impact of weekly sessions.
- Most evidence focuses on literacy programs for young children, but there is strong positive evidence of tutoring effectiveness in middle and high school, especially in math.
- There is limited evidence related to the structure of programs, in-program training, and supervision of tutors.
- The evidence for online tutoring is mixed and still emerging: this is an area that requires more research.
- There is evidence that peer tutoring can contribute to strong positive results for students.
- As well, most of the research on private tutoring focuses on the political economy of this growing educational market; evidence of its effectiveness is ambivalent and inconclusive.
- While most studies focus on the benefits of tutoring programs for students, there is some research that points to the positive professional and civic impact of tutoring on the tutors, particularly with youth experience programs.

Though the cost of tutoring is relatively high among educational interventions and varies considerably depending on policy decisions about delivery models, cost–benefit research based on carefully quantified assumptions about long-term productivity and social costs suggest that it is a highly cost-effective intervention.

Tutoring: Evidence of Effectiveness from Canadian Programs

Tutoring is not a novelty in the Canadian education landscape. Initially provided through informal, casual, or small "shadow education" enterprises, since the early 2000s the country has seen an exponential growth in the tutoring ecosystem as for-profit tutoring franchises have taken hold. In the early 2000s, Davies and Aurini (2004) documented nearly 400 tutoring service providers in Ontario. We searched YellowPages in October 2021, which revealed 1,468 organizations offering some type of tutoring service in Toronto alone. Demand has increased substantially during the COVID-19 pandemic (Global Industry Analysts, 2020). We do not yet know how the pandemic will affect the availability of tutoring, and to date there is no research on the effectiveness of programs developed or delivered in response to the pandemic.

Non-profit community- and school-based tutoring and academic support programs are also common in Canada. For example, a recent mapping exercise confirmed 69 potential community tutoring organizations active in Toronto, of which 39 responded to a formal survey (Yau et al., 2021). Unlike for-profit tutoring organizations, such programs do not respond to private demand for tutoring services from middle- and high-income families seeking to ensure a competitive edge for their children. Instead, they focus on addressing inequalities and education gaps experienced by underserved children.

To rapidly scope the evidence and research literature on tutoring in Canada, we conducted an internet search accompanied by bibliographical citation chaining to look for research and evaluations addressing the effects of tutoring on learning outcomes, particularly related to non-profit community- and school-based programs, usually targeting underserved students. We found that there are only a handful of published evaluations and research studies on such programs, with wide variation in their design, scope, depth, and methodological approach. The search was conducted in English only, which might have fallen short of capturing research and programs carried out in francophone contexts.

In the Appendix, we provide a descriptive table that summarizes these studies and the programs they evaluated. We include a brief description of each program's model and scope; the evaluation sources, methods, and outcomes reported by the studies, including some of their caveats; and, when available, a synthesis of the recommendations presented by the researchers. A total of 10

programs, representing those for which we found published studies, are included in the table: JUMP Math (Randhawa, 2021), TutorBright (Hickey & Flynn, 2019), Crescent School vLearning (Chow & Libby, 2017), Peer Assisted Learning Strategies (PALS) (Jones et al., 2017), Pathways to Education (Cumming, 2012; Oreopoulos et al., 2017; Rowen, 2012), beyond 3:30 (Yau et al., 2015), Teach Your Children Well (Flynn et al., 2012), Licensed to Learn (Yau & Archer, 2011), E-tutoring (Johnson & Bratt, 2008), and Reading Computer-Assisted Tutoring (CAT) Program (Chambers et al., 2001). Also included is an evaluation conducted for RBC's after-school support programs that covered several different programs funded by the bank (Mishna et al., 2013).

These programs illustrate the great diversity in the tutoring models and approaches being used in Canadian contexts. For example, among these 11 initiatives:

- Four programs are, at least in part, peer tutoring initiatives (Crescent School vLearning; PALS; Licensed to Learn; beyond 3:30), with same-age or cross-age approaches, operating in either elementary, middle, and secondary schools.
- One of them (Teach Your Children Well) is a "train-the-trainer" model that supported foster parents to provide home-based tutoring (Flynn et al, 2012).
- Three include a tutoring component as part of a broader, multi-dimensional after-school program: Pathways to Education (secondary school); beyond 3:30 (middle school) and the RBC after-school support programs (elementary and secondary school).
- Two are more traditional tutoring programs (JUMP Math and TutorBright) offering academically focused tutoring by trained tutors or teachers with a structured focus on academic remediation.
- Four make intensive use of technology, either through computer-assisted learning, online gaming, or other digital innovations to support tutoring: JUMP Math, Reading CAT, Crescent School vLearning, and E-Tutoring.

Diversity is also present across many other features of these programs. For instance, there are remarkable differences in terms of their scale and duration (from large school board initiatives and multi-year programs, to small, short-term pilot projects and single-school interventions); target groups (from youth in geographically defined vulnerable communities, to specific demographic groups such as students with disabilities or foster children); and content focus (including language and literacy, math and numeracy, other school subjects, or a combination of those). Markedly, among the recommendations highlighted by the researchers of these studies, there is some common ground. Recurring themes are the importance of adopting strategies to foster student uptake and engagement (e.g., fun activities alongside tutoring), as well as tailoring programs to meet individual student and community needs, particularly in relation to at-risk youth or underserved groups.

Besides the variation observed in program models, there was also considerable diversity among the studies' evaluation approaches and research methods. Only a few of these interventions were

evaluated using experimental or quasi-experimental impact studies (e.g., Flynn et al., 2012; Hickey & Flynn, 2019; Oreopoulos et al., 2017). Many of the studies were circumscribed by small sample populations and very specific target groups, which might jeopardize the generalizability of evaluation findings. Several also relied on parent, staff, or child surveys, and included limited evidence on academic outcomes. The caveats identified in some of these studies refer not only to the lack of rigorous analyses of program effects but also, in some cases, to the absence of detailed information on methodological approaches or even complete information on program design. This makes meta-analysis and synthesis of results virtually impossible. It also highlights the need for further research and points to the critical importance of developing capacity and tools to support evaluation and program learning in the tutoring space in Canada, a research gap that is indeed acknowledged in several of the studies included in the Appendix.

Nonetheless, within this limited evidence base, the overall findings of these studies of tutoring initiatives in Canada indicate positive outcomes. The studies generally point to parental and student satisfaction with the programs. They also provide some evidence of efficacy in improving learning outcomes. The studies reinforce the hypothesis that relationship building forms a key and appreciated component of tutoring initiatives, and suggest that benefits accrue not only to the students being tutoring but to the tutors themselves.

Overall, however, the picture of the tutoring landscape in Canada that emerges both in this review and in our ecosystem map is a highly decentralized collection of individual programs with a very limited evidence base. In this context, the potential for tutoring to help mitigate the educational impacts of the pandemic might remain underutilized, beyond some smaller scale provincial initiatives that are presented in the next section of this review. By contrast, as we discuss in the next section, some of Canada's peer countries have made significant institutional moves to incorporate tutoring as an important supplement to regular classroom instruction as part of their responses to the COVID-19 pandemic and the educational gaps that have emerged or widened due to the associated educational disruptions.

Incorporating Tutoring into Educational Systems as a Response to Pandemic Disruptions: International and Provincial Experiences

The strong evidence base supporting tutoring has led many educational systems to incorporate large-scale tutoring programs into their pandemic recovery strategies. This section reviews some of the different models that have been implemented in four OECD countries: Australia, the Netherlands, the United Kingdom, and the United States, all of which have made significant investments in tutoring (Education Policy Institute, 2021). It also includes a profile of two smaller scale initiatives in the Canadian provinces of Quebec and Ontario.

While the formats adopted vary significantly across jurisdictions, a common characteristic shared by these emerging programs is that they tend to focus on students facing significant academic or socioeconomic challenges. They are usually managed by schools, districts, or state/provincial authorities, while tutoring services themselves might be provided by for-profit and/or non-profit organizations or qualified individuals participating in a government registry. A special feature of large-scale U.S.-based tutoring initiatives is their use of funded national service programs for college graduates (i.e., AmeriCorps) for staffing.

Australia: Tutoring initiatives in New South Wales and Victoria

Some Australian states, such as New South Wales (NSW) and Victoria, have introduced tutoring as part of their efforts to put learning back on track after the disruptions caused by the pandemic.

In November 2020, the government of NSW launched the COVID Intensive Learning Support Program (ILSP), with an investment of AU$337 million (CA$310 million[2]), targeting all public primary, secondary, and special schools in the state. ILSP focuses on providing funding to schools to employ additional educators who deliver small group tuition for those students in greatest need of support. The initiative focuses on literacy and numeracy, with priority for students from low socioeconomic households. It aims to recruit up to 5,500 additional educators to serve 290,000 students (in a population of 811,000 public school students) during the 2021 school year (NSW Department of Education, 2021c).

2 Unless otherwise stated, currency conversions are approximate and calculated as of October 15, 2021 rates.

Current, occasional, and retired teachers, as well as educators who are not certified teachers (including paraprofessionals, graduate students with teaching experience at the university level, and student teachers) are eligible to become tutors. Those without teacher accreditation work under the supervision of an accredited professional. Approved prospective tutors are included in a digital talent pool, from which schools select the most appropriate tutors for their needs.

The program recommends tutoring for groups ranging from two to five students, in 20- to 50-minute sessions, at least three times a week for periods of 10 to 20 weeks. The program's funding is extremely flexible: it can be used by schools to employ tutors during or after school hours, or to employ additional staff to enable the release of permanent staff during school hours for tutoring. In addition, targeted professional learning to support small group tuition, a repository of literacy and numeracy pedagogical resources, and an online collaboration platform for the engagement of the ILSP community are included in the program (NSW Department of Education, 2021a). In early March 2021, the NSW government reported having nearly 4,000 additional educators working in the program across 1,800 schools (NSW Department of Education, 2021b).

Similarly, the state of Victoria created the Tutor Learning Initiative (TLI) in October 2020 to provide targeted teaching to students identified as in need of support (Victoria Department of Education and Training, n.d.). With an announced investment of AU$250 million (CA$230 million, for a population of 645,000 public school students), the program will provide AU$15,000 as a base-level allocation to schools, with additional budget allocations based on student enrolment numbers and disadvantage indicators. TLI aims to engage 4,100 additional educators and proposes a model of two or three 45-minute sessions per week, for groups to up to five students, over 26 weeks.

Tutors may be registered teachers, holders of a permission to teach, or supervised pre-service teachers. Eligible tutors are included in a register made available to schools by the government, and recruitment is done directly by schools, based on student learning requirements. The government provides guidance on how to identify and select the students to be supported, as well as on monitoring program implementation and progress of student learning. Schools can choose between in-class and out-of-class tutoring models—or a combination—to meet contextual needs.

The Netherlands: National funding for school-level initiatives

In June 2020, the Dutch government earmarked 244 million euros (CA$359 million), topped by an additional 38 million euros (CA$56 million) in October of the same year, to support schools in mitigating the education impacts of the COVID-19 pandemic with measures to help children who had fallen behind on learning due to school closures (Eurydice, 2020). There are approximately 2.5 million students

in elementary and secondary schools in the Netherlands. In the first tranche of applications to the new subsidy, which took place between July and December 2020, more than 1,550 primary, secondary, and vocational schools, as well as 312 early years centres requested to use these grants for one or more catch-up interventions of their choice, such as summer schools, extensions of the regular school day, provision of additional support during school hours, and small group or one-on-one remedial tutoring (Kortekaas-Rijlaarsdam et al., n.d.). These interventions may be led by school staff; carried out in partnership with other schools, teacher training colleges, or external organizations; or outsourced to other parties. At the school level, students are targeted according to prescribed criteria related to performance lags in language and math or other secondary core subjects; being learners of Dutch as a second language; experiencing delays in socio-emotional development; or, in the case of vocational education, lacking the development of practical experience in their area of training.

To support the initiative, the government proposed recruiting and training student teachers to engage in tutoring, in what has been deemed to be one of the first large-scale responses to the learning disruptions caused by the pandemic (Slavin, 2020). In total, government subsidies for catch-up initiatives have reportedly reached 300,000 students across more than 4,000 primary and 600 secondary schools (Ministry of Education, Culture and Science, 2021). A new national education program with a menu of interventions to tackle the education-related effects of the pandemic has also been launched, which includes one-on-one and small group tutoring (Ministry of Education, Culture and Science, n.d., 2021). There is no information to date on the extent to which schools have chosen tutoring among other options, the number of tutors engaged, or the numbers of students served.

England's National Tutoring Programme

In June 2020, the United Kingdom's Department for Education, announced a COVID-19 "catch-up" package of 1 billion pounds (CA$1.69 billion) to mitigate learning losses generated by school closures in the 2019–2020 school year (Department for Education, 2020).[3] Of this, 350 million pounds (CA$592 million) was directed to a new National Tutoring Programme (NTP).[4] Designed and implemented through public–private partnerships, the NTP aims to provide additional, targeted academic support for disadvantaged students. (In June 2021, they added another 1.4 billion pounds for education recovery (CA$2.37 billion), bringing the total for tutoring up to 1 billion pounds (Walker & Hall, 2021)). There are 11.7 million students in England.

3 An additional 700 million pounds (CA$1.18 billion) was announced by the English government as part of its education catch-up strategy in early 2021, as schools experienced a second major closure due to the pandemic (National Audit Office, 2021).

4 While the initial allocation for the NTP corresponded to 350 million pounds (CA$590 million) for 2020–2021, the government carried forward 137 million pounds (CA$230 million) to the 2021–2022 school year, given difficulties in gaining scale with speed without jeopardizing delivery and quality in the program (National Audit Office, 2021).

The NTP comprises several discrete tutoring funding streams: one focused on oral skills development targeting 4- and 5-year-olds in the first year of primary school; a second focused on providing tuition partners for primary and secondary schools; a third also targeting primary and secondary schools, focused on providing academic mentors; and a fourth, consisting of a separate fund for tutoring of 16- to 19-year-olds pursuing academic (pre-university) or vocational qualifications (National Tutoring Programme, n.d.).

Oral skills development

This component of the NTP consists of 9 million pounds (CA$15 million) allocated to the oral skills development of young children through the use of a specific program: the Nuffield Early Language Intervention (NELI), developed in partnership with the Education Endowment Fund (EEF), a non-profit organization (Nuffield Foundation, n.d.). The NELI consists of training and resources for schools to implement a 20-week targeted program for 4- and 5-year-old children in need of support, through small-group and one-on-one sessions run by trained teaching assistants from the school staff or hired as academic mentors through another NTP component (Nuffield Foundation, n.d.). With initial priority given to schools according to the proportion of disadvantaged students, by the end of 2020, more than 6,500 schools—a third of primary schools in England—had signed up. In 2021, the government extended NELI's funding and its coverage target to reach all schools in England offering the first year of primary education (Nuffield Foundation, n.d.).

Tuition partners

Available to all state primary and secondary schools in England, this component was also coordinated by the EEF in 2020–2021. The EEF was responsible for selecting eligible partners for the program on the basis of defined criteria (experience; recruitment and training practices; tutor qualifications; communication, monitoring, and quality assurance systems; evidence of impact; scaling capacity; costs). For the 2020–2021 academic year, 33 tuition partners were selected, of which most came from the for-profit sector (National Tutoring Programme, 2020). The NTP program model allows for online, blended, or in-person tuition, as well as for 1:1, 1:2, or 1:3 tutoring (the latter is still highly effective and a preferred group size in terms of cost) during the regular school day (National Tutoring Programme, n.d.). The NTP pays for 75% of a 15-hour tuition block per student, and schools cover the remaining 25%, for which they are encouraged to use additional COVID-19 pandemic catch-up funds allocated to schools or per-student funding distributed on the basis of relative disadvantage. Schools are responsible for selecting the approved tuition partner they will work with, as well as identifying the students to be tutored. While the program states the expectation that the majority of students receiving tutoring should be those most disadvantaged, the decision of which students are in most need of academic support and will be targeted for tutoring is left to the professional judgement of teachers and school leaders.

Delivery of this NTP component was launched in November 2020 with an initial target of using 15,000 tutors to reach up to 250,000 students—approximately 20% of the total number of disadvantaged children in the country (National Statistics, 2021), and far fewer than the 35% of students who fell behind the expected standards in reading, writing, and math in 2019 (Department for Education, 2019). By February 2021, the tuition partner model had registered around half of its target number across 4,000 schools, and a total of 41,000 students had started receiving tuition (National Audit Office, 2021). Changes are currently underway in the program. It will be run by a different organization (Randstad, the international for-profit employment agency) in the next school year. In addition, a new school-led option will be introduced in which schools receive grants to fund tutoring provided by their own staff or locally sourced organizations (National Tutoring Programme, n.d.).

Academic mentors

The academic mentors component of the NTP was led by Teach First in the 2020–2021 school year, a teacher training organization modeled on Teach for America. In 2021–2022, Randstad will administer this component as well. With an initial budget allocation of 28 million pounds (CA$47 million), this stream involves placing one or two mentors directly in targeted schools serving disadvantaged communities (Teach First, n.d.). In 2020–2021, academic mentors were university graduates, selected and trained by Teach First, and then contracted as full-time staff by schools. Their salaries, stipulated at 19,000 pounds (about CA$32,000) per year, were reimbursed by the government, but schools were expected to cover overhead costs estimated at 15–20% of the total. The program's training was carried out in an intensive two-week session (shortened to one week for mentors holding a teacher qualification), followed by monthly workshops and continuous support from Teach First. Mentors were expected to provide one-on-one and small group support within placement schools, collaborating with the schools' teachers and supporting their work. Throughout their appointment, mentors were required to work with a minimum of 50 students. Schools were responsible for identifying the subjects in greatest need of support and could nominate eligible applicants whose selection could be fast-tracked. During the 2020–2021 school year, a total of 1,100 academic mentors were placed in schools in three placement tranches (November, January, and February) (National Tutoring Programme, n.d.). Requests to receive a mentor, however, outnumbered supply, as they were sent by almost 1,800 eligible schools (National Audit Office, 2021).

16-19 tuition fund

The NTP included a grant of 96 million pounds (CA$162 million) distributed on an opt-in basis to schools, colleges, and other education providers of post-secondary, non-university academic, and vocational qualifications with a focus on students with low educational attainment. This funding was also directed to small-group tuition in English, math, other subjects, or vocational learning provided by institutions' own staff or contracted out to organizations. There was no specific list of approved partners

(Education and Skills Funding Agency, 2021). In the 2021–2022 school year, economic disadvantage, in addition to low prior attainment, will guide the eligibility criteria for these funds, which have been expanded and extended until 2023 (Education and Skills Funding Agency, 2021).

Concerns around the initial set-up phase of the NTP have been raised by the U.K. National Audit Office (2021). In a report about the Department of Education's overall response to the pandemic, its support for children's learning and the overall impacts of the schooling disruptions on children, the audit authority questioned whether NTP had reached the most vulnerable schools and students. The audit report affirmed that among the more than 40,000 children already receiving NTP tuition in early 2021, 56% were not students who would qualify as disadvantaged in the U.K. system. Moreover, in relation to the academic mentors' stream in particular, the report stressed the stark mismatch between demand and supply: by January 2021, Teach First was reported to having received requests for mentors from nearly 1,800 schools, but only 1,100 mentors had been placed, leaving hundreds of eligible schools unattended.[5]

United States: Federal funding and partnerships at state and district levels

In March 2021, the United States Congress passed the American Rescue Plan Act (ARPA), with a record federal investment in schools: US$125.4 billion (CA$157 billion) to address the impacts of the COVID-19 pandemic in the K–12 sector (Griffith, 2021). This funding comes on top of billions of dollars in previously approved federal funds[6] to tackle the impacts of the pandemic in education. Researchers from Brown University have laid out costed plans to include a variety of tutoring interventions as part of this initiative (Kraft & Falken, 2020).

5 Other concerns about the NTP have appeared in some scholarly work and news articles. In a book published before the actual rollout of the program, Breslin (2021) voiced doubts about its potential advantages in fighting educational inequality and anticipated possible implementation issues. Articles in specialized and national media outlets have pointed out the existence of significant variation in regional supply of tuition partners and the resulting inequality in school uptake rates (Booth, 2021), as well as tensions related to profit-maximization strategies of specific tuition partners, such as the employment of underage and foreign-based tutors (Weale, 2021). These articles have also noted significant disparities between the unitary costs of tuition sessions, in terms of tax money, and the hourly rates paid by some providers to their tutors (D. Ferguson, 2021). Finally, a recent survey carried out among 728 English school leaders by their national association in June 2021 showed strong support (70%) for tutoring run by schools themselves as a priority for pandemic recovery, but very low levels of support (3%) to the NTP model (National Association of Head Teachers, 2021).

6 US$13.2 billion from the Coronavirus Aid, Relief, and Economic Security (CARES) Act, passed in March, and US$54.3 billion from the Coronavirus Response and Consolidation Appropriations Act, passed in December 2020.

One of the distinctive features of ARPA is its explicit focus on mitigating learning loss. Around 90% of ARPA funds will be distributed to local education agencies on the basis of the funding formula for disadvantaged students (Title I), with considerable flexibility on how moneys can be used, provided that at least 20% goes to addressing lost learning. In addition, at least 5% of the money allocated at the state level is explicitly directed to evidence-based interventions for addressing learning loss, while 2% goes to the provision of after-school and summer enrichment programs. Tutoring initiatives can be potentially funded by any of these funding streams, and a varied pool of education actors and researchers have strongly advocated for them, given the strong evidence base reviewed in Part 2 of this paper. In fact, a recent analysis of 44 state plans for education recovery from the pandemic showed that tutoring is being funded by at least two dozen of them (LePage & Jordan, 2021).

ARPA also provided an additional US$1 billion (CA$1.24 billion) to expand national service programs, particularly those carried out under the AmeriCorps umbrella, to support educational recovery strategies, including tutoring programs (Jordan, 2021). AmeriCorps is a federal service and volunteering agency that currently supports students in nearly 12,000 schools, providing mentoring, tutoring, and other after school initiatives (AmeriCorps, n.d.). It is likely that existing AmeriCorps initiatives—particularly tutoring programs with robust evaluations—will be expanded or replicated with pandemic-related funding boosts. There are a number of existing initiatives:

> City Year is a program that places teams of 8 to 15 young AmeriCorps members as student success coaches in under-resourced, urban K–12 schools for a full-time service year (City Year, n.d.). Coaches, aged 18 to 25 with at least a high school diploma, work as "near-peer" tutors, mentors, and role-models for struggling students with academic or behavioural issues. Working in partnership with teachers and leaders of their assigned school and led by a program impact manager, coaches can provide one-on-one and small-group tutoring in English and math, classroom support, and after-school activities. They are entitled to bi-weekly benefits ranging from US$650 to $950, in addition to a US$6,300 award that can be applied towards future or existing student loans. The City Year program adopts a holistic, relationship-driven approach, with a strong focus on socio-emotional skills development alongside academic support. Training includes a start-of-year induction and ongoing professional development. A recent program evaluation found that the intervention led to improved attendance, academic outcomes, and socio-emotional competencies (Balfanz & Byrnes, 2020). In 2018–2019, City Year was present in 350 schools across 29 U.S. cities. The model has also been exported to South Africa and the U.K.

- Saga Education, carried out by a non-profit that mobilizes AmeriCorps tutors for partner schools in Chicago and Washington, D.C.,[7] provides personalized math tutorials and mentorship for high school students from historically disadvantaged groups (Saga Education, n.d.). Developed by a Boston charter school, Saga's intervention model requires tutors to have at least a two-year postsecondary degree. They receive two weeks of training prior to beginning their service, as well as ongoing professional development. Their annual stipend is around US$20,000, plus the same education award provided by City Year. Saga tutorials follow a specifically created curriculum and are delivered to groups of two to four students in daily one-hour sessions, during regular school hours and for the duration of the school year. Like City Year, Saga Education goes beyond academic support, with AmeriCorps members working in partner schools directed to build mentorship and supportive relationships with students. Rigorous randomized controlled trial evaluations found that the program yielded significant academic gains and scored high in the cost–benefit criteria, rivalling, for example, the much-vaunted economic benefits achieved through early childhood education (Cook et al., 2014; Guryan et al., 2021). In 2020–2021, Saga Education was set to reach 4,500 students across 34 schools.

7 Saga Education also operates in New York City, Broward County (Florida), Charleston (South Carolina), and Providence (Rhode Island), but volunteers in those locations are Saga Fellows, not linked to AmeriCorps.

- Reading Partners is another cost-effective tutoring initiative supported by AmeriCorps with evidence of positive and statistically significant results (Jacob et al., 2016; Reichhardt et al., 2017). The program targets K–5 students in partner schools who are behind grade level in reading. It is currently being implemented in 10 American states (Reading Partners, n.d.). According to the model, students are paired with tutors and receive two one-on-one tutoring sessions of 60 (in person) or 90 (online) minutes per week, based on a structured, easy-to-deliver curriculum. Tutors are volunteers with varied experiences, who must be over 18, pass a background check, commit to at least one regular tutoring session per week, and reside in proximity to the partner school. They undergo a two- to four-hour initial training session, receive ongoing coaching and support from the program, and have access to a volunteer hub with training videos and resources. In 2019–2020, Reading Partners served around 8,500 students across participating states.

Canada: Provincial, community and school-based tutoring initiatives

In Canada, education is a provincial responsibility. To our knowledge, there has been no systematic analysis of provincial efforts to respond to COVID-19 pandemic disruptions to education (OECD, 2021), though a recent paper prepared for the Ontario COVID-19 Science Advisory Table highlights the status of Ontario's education pandemic response (Gallagher-Mackay

et al., 2021). This report estimates that, in comparison to resourcing in the U.K., the Netherlands, and the U.S., Ontario has devoted the lowest levels of funding per capita for learning recovery.

In a rapid online search (in English) in June 2021, we could find only limited evidence related to provincial plans to utilize large-scale tutoring initiatives as a response to pandemic-related disruptions in education. There have likely been a number of grassroots initiatives developed in response to the pandemic, but the focus of this search was government-led/government-supported pandemic responses.

Two provincially funded tutoring programs have been described in Canadian media in 2020 and 2021:

> In January 2021, Quebec's provincial government announced it would invest in an online tutoring initiative to respond to pandemic school disruptions. College and university students and retired teaching personnel enroll to be tutors in the program via the Répondez présent platform. Teachers, including substitute teachers, and other educational workers who are already employed can apply through their school service centre, school board, or private school administration. The provincial education minister also announced a $12 million partnership with Alloprof and Tel-jeunes. Alloprof will receive more than $7.3 million over two years to establish pedagogical support and guidance programs for students with learning difficulties and those at risk of academic failure. Tel-jeunes appears to be more of a student help line, and it will get more than $4.5 million over two years to provide assistance and counselling to students (Presse Canadienne, 2021).

> In the early days of the pandemic in Ontario, the provincial government provided additional support for Mathify, a free one-on-one online math tutoring program offered by TVOntario (TVO) for students in Grades 6 to 10 (Ministry of Education, 2020). Tutors are Ontario certified teachers and the program runs during the academic school year and the summer to support success in math. There are few available details on program size and funding—TVO's annual 2019/2020 report suggests that over 81,000 students registered for the program (TVO, 2020). Details about increases in funding are not available.

In a related publication to this evidence review, we provide a first-in-Canada ecosystem map of non-profit tutoring services available in Toronto (Yau et al., 2021). This study, though geographically limited, highlights the richness and decentralized nature of small-, medium-, and large-scale tutoring initiatives that focus on meeting the needs of students facing systematic disadvantage—disadvantages that all evidence suggests may have been exacerbated by the COVID-19 pandemic. Funding for these organizations comes from many sources, and fewer than half receive government support. They use a wide variety of models, sometimes working in partnership with school boards and districts, and a large majority rely on volunteers. The majority of these programs offer only low frequency tutoring. Fewer than half provide ongoing training for their tutors, and most do not utilize pre-set curricula or learning materials.

Finally, it is worth noting that funded service-learning programs hold distinct promise for pandemic education recovery in Canada. Canada has sustained high levels of volunteerism, including in the field of education. More than 50,000 volunteers stepped up to the federal government's emergency call in April 2020 (Miller, 2020). Another 35,000 students signed up for the Canada Student Service Grant in 2020, a national program for college and university students announced but later cancelled in 2020 (Cullen, 2020). Other mechanisms to support student employment are also available. Unlike the U.S., however, Canada and its provinces have not stepped forward with a vision for marrying a national service initiative to the goal of educational equity in the post-pandemic recovery.

Lessons from international contexts

This review makes it clear that other international jurisdictions have made tutoring a key part of their strategies for educational recovery in wake of the ongoing disruptions associated with the COVID-19 pandemic. Australia, the Netherlands, the United Kingdom, and the United States have made significant investments in tutoring programs, either as standalone initiatives or as part of a menu of approved options to support students in accelerating their learning and closing gaps. There are differences in models: for example, the Australian programs primarily employ certified teachers, while initiatives in the U.S. and the United Kingdom draw on paraprofessionals; in Australia, the government created a central directory of tutors who are eligible to be hired by schools, whereas in the United Kingdom, they use approved service providers as well as hiring and training a group of academic mentors. Different jurisdictions used different policy levers to try to ensure that tutoring supports were targeted to students with the greatest need—although in practice, there were challenges ensuring this goal was met. In the United States, the AmeriCorps program is an impressive model of tying national service to educational recovery at a large scale.

By contrast, Canada's approach to tutoring (outside of Quebec) has been short on both funding and centralized support. Accurately summarizing the Canadian response is challenging for a number of reasons. Although there is a Council of Ministers of Education of Canada, there is no central clearinghouse that provides information on education disruption or recovery efforts across Canada's 13 different school systems, which makes it hard to find all relevant initiatives. Tutoring is a particularly decentralized part of education systems across the country, with a mix of not-for-profit and for-profit provision and limited government funding, so it is particularly difficult to track how the tutoring sector has responded to the pandemic and, particularly, to education gaps faced by more disadvantaged students. Overall, it appears that tutoring has received negligible support and consideration in Canada as a policy response to education disruption in the wake of the COVID-19 pandemic, a situation distinctly at odds with some of our closest comparator countries.

Conclusion

Education disruption associated with the COVID-19 pandemic has had a striking impact on student learning and pathways around the world. While there is limited data in Canada, all evidence points to the conclusion that school closures, blended learning, compressed schedules, cohorting, and a loss of extra- and co-curricular activities across the country have had major impacts on students' opportunities to learn. All international evidence suggests that average student achievement is far behind what it would have been pre-pandemic, but also that gaps are widening for disadvantaged students who have fallen further behind and, where applicable, are regaining ground more slowly. There are also concerns that disrupted schooling has interfered with students' well-being, mental health, and connection to school. Without intervention, these multi-dimensional harms can have long-term impacts. Apart from the human toll, economic estimates suggest that lost skills and interrupted educational trajectories are likely to have lifelong economic impacts for this cohort of students and for national economies and social equity.

In light of these frightening prospects, education systems need to consider multi-dimensional responses, including appropriate measures to keep schools open safely, support for students' well-being, and measures to address students' academic challenges. While we have seen major support for business recovery, there has yet to be a major investment in supporting students coping with the pandemic. This paper lays out the case for one important element of the educational recovery toolkit: large-scale tutoring programs.

Impact evaluations around the world have shown that investments in individual and small-group tutoring programs can play an enormous role in ensuring that children from disadvantaged groups reach their potential. Compared to almost all other educational interventions, robust evidence shows that high-frequency tutoring programs are exceptionally effective in reversing large gaps in learning and supporting on-time completion of school and progress into the post-secondary education or training that is so often a prerequisite for full participation in the future economy.

Research also provides us with lessons about effective program designs. For example, though teacher-tutoring is the most effective type, programs that use paraprofessionals also have very powerful effects; there is a need for more frequent tutoring to achieve the largest effects with significant gap-closing potential; and it is important that tutoring have strong linkages to school and classroom instruction. There is some evidence that pre-established curricula, learning materials, and support and training for tutors contributes to effectiveness. It is clear that technology offers new opportunities for reach and scaling of tutoring programs. Yet there are still areas where we need much more evidence, for instance, in order to more fully understand the effectiveness and reach of community-based tutoring initiatives and the impacts of tutoring on tutors themselves (especially young adults for whom tutoring may provide both a meaningful opportunity to learn through service and a pathway into education). While there are few cost–benefit studies of tutoring, the studies that do exist tend to point strongly to the conclusion that investments in tutoring contribute powerfully to improved lifetime earnings and lower social costs for participants and may also contribute to economic and social outcomes for the tutors themselves.

Because the evidence is so strong, Australia, the Netherlands, England, and the United States have included substantial funding for tutoring programs as part of their pandemic educational recovery plans. In the U.S., among a range of models, tutoring that draws on national service programs for college and university students shows clear evidence of high impact.

Canada boasts many community-based programs that provide academic support to underserved students, including those whose academic success and well-being may have been especially harmed by the pandemic. Yet, federally and provincially (with the partial exception of Quebec), there has been no sign of a large-scale increase in funding to, or scaling up of, these programs. Nor are there any plans to do so, or to connect a national service program and work-integrated learning for youth to programs contributing to improving equity and opportunity in our schools, a need exacerbated by the COVID-19 pandemic.

Canada faces a key challenge as we look towards a more prosperous and just future: how do we support students to ensure that the significant disruptions faced by students during the pandemic do not have long-term effects? Given the strong evidence that well-designed tutoring programs are a powerful intervention that can accelerate learning, especially for disadvantaged students, we should follow the impressive examples of large-scale tutoring programs adopted by other countries to address pandemic-related educational harms and embrace tutoring as a key part of a significant investment in educational recovery.

While there are multiple models of tutoring programs available, we were particularly struck by the win–win potential of a national service corps that marries work-integrated learning and public service for university and college graduates, which has the potential to support significant gains for struggling students and provide new resources in schools to support teachers who will be facing unprecedented challenges in meeting the diverse needs of their students.

This review of evidence has shown that large-scale tutoring programs are among the best investments governments can make to address widening educational inequalities and learning gaps wrought on Canadian children by the COVID-19 pandemic.

Appendix

Evaluations of tutoring experiences in Canada

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
JUMP Math/ Learning Disabilities Association of Niagara Region (Randhawa, 2021)	One-hour sessions, 1:1, online tutoring in math and numeracy; pivoted to online delivery during the pandemic. Sessions twice a week over eight weeks. Explicit math instruction and repeated practice through digital platform. Tutoring provided by volunteers, using program-specific teaching resources.	20 students in grades 1–8 in the Niagara region (Ontario) with math learning gaps one year or more behind grade level.	Mixed methods, using identical pre- and post-assessments of students' math skills and confidence; digital surveys completed by volunteer tutors and program facilitators, as well as by nine caregivers, for feedback on program implementation and children's experiences. Caveats: no rigorous comparison of program effects with control for student characteristics or trends over time; pre-post descriptive statistics with assessment data available for small subsample of 13 students.	Improvement in the number of questions answered correctly per level assessed and completion of higher-level sections in the post-assessment, as compared to the pre-assessment. Overall positive feedback from tutors, staff, and caregivers.	Offer both online and inperson tutoring to increase accessibility and suit individual preferences, and incorporate gamification and fun activities in online mode.

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
TutorBright (Hickey & Flynn, 2019)	1:1, in-home, one-hour tutoring sessions, twice a week during the school year. Tutoring focused on: a) direct instruction of reading and math, with detailed instructor manuals and customized workbooks; b) homework help in other subjects as needed; and c) development of tutor–student mentoring relationships. Tutoring provided by individuals with at least an undergraduate degree, teaching and mentoring experience, and attitudinal skills.	70 students in grades 1–11, living in foster-family settings in Ontario.	Randomized controlled trial: treatment group assigned to intervention and control group assigned to waiting list. Measures: standardized math and reading student achievement tests; non-cognitive tests and background questionnaires completed by students, foster parents, and child welfare workers. Multiple regression analysis on pre-test/post-test results and correlational analysis to assess mediating factors. Caveats: Small sample size and specificities of target population.	Statistically significant gains in reading fluency, reading comprehension, and mathematics calculation, but not in word reading, spelling, math fluency, or applied math problems. Despite learning gains, treatment students remained below average achievement. Tutoring effectiveness moderated by age, executive functioning, type of caregiver involvement in schoolwork, and self-reported post-traumatic stress disorder symptoms. No spillover effects found.	Place more emphasis on direct instruction as the primary component of tutoring, rather than homework help; promote active involvement of caregivers in foster children's education; use classroom teacher ratings to assess the value of homework help and mentoring components of tutoring; carry out longer-term studies to assess the "staying power" of tutoring over time and dosage for students to achieve "average range" performance.
Crescent School vLearning (Chow & Libby, 2017)	Pilot cross-age online peer tutoring program, with students in grades 9 and 10 serving as tutors on an online platform. Students in grades 7–9 submitted questions in three subject areas (science/geography, French, and English/history) and tutors responded within 24 hours.	Students in grades 7 and 8 in a private school in Toronto, Ontario.	36 questions that were answered by tutors on the website were evaluated by the subject teachers and students, using a four-point rubric. Subject areas, response times, and quality of responses by students and teachers were tabulated. Caveats: Sample size of students is not given; only applied a test of proportions to examine differences—no rigorous statistical analysis.	Most responses were received in less than two hours, most questions were about science/geography, and on average students and teachers scored the quality of responses at level 4 ("exceeding expectations").	Given the high volume of questions on the platform, expand the team of tutors to accommodate students' questions and concerns.

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
Peer-Assisted Learning Strategies (PALS) (Jones et al., 2017)	Classroom-based, highly structured reading intervention based on peer tutoring. Flexibly pairs higher- and lower-functioning students from the same classroom for decoding, fluency, and comprehension activities. Includes a regular assessment component, called curriculum-based measurement (CBM), used by teachers to monitor progress and rearrange pairs.	1,429 grade 3 students across 38 schools in a school board in southwestern Ontario.	Statistical analyses of variance and correlations, using CBM data, validated by provincial assessment data (EQAO). Measurement of gains over time (growth model), with robustness checks to identify trends. Caveats: Implementation did not follow typical PALS model and teacher "buy-in" was not assessed.	Improvement of reading fluency over time for the majority of students, but high-risk students did not catch up.	Provide additional supports to the lowest-performing, high-risk students.

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
Pathways to Education (Cumming, 2012; Oreopoulos et al., 2017; Rowen, 2012)	Tutoring provided as part of a comprehensive intervention involving counselling and academic, social, and financial support for at-risk youth. Tutoring offered four nights per week, 1:1 or in small groups, covering core academic areas, study skills, literacy, numeracy, and English for language learners. Students falling behind grade levels expected to attend at least twice per week. Provided by volunteer tutors. Eligibility based on area of residence (targeted community).	High school students living in targeted low-income communities in Toronto, Ontario.	Two strands of evaluation: 1) Mixed methods, using Toronto District School Board data and provincial assessment (EQAO) data, public housing data, Pathways to Education administrative records and interviews with 10 Pathways staff and tutors in the original program site. Difference-in-differences estimation strategy, comparing eligible and ineligible students before and after the introduction of the program, with rigorous strategy and robustness checks (Oreopoulos et al., 2017). Caveat: Estimates do not isolate effects of tutoring from other program components. 2) Longitudinal research and case studies, using non-cognitive and language assessments, surveys, interviews, and ethnography, within the Adolescent Literacy in Three Urban Regions (ALTUR) project, covering 21 Pathways to Education students (Cumming, 2012). Caveat: ALTUR studies focused on key factors affecting adolescent literacy, not tutoring impacts per se.	1) Pathways is estimated to have increased high school completion by 35% and postsecondary enrollment by more than 60%. Intermediate effects on math and reading grades and on the likelihood of taking more university prerequisite courses. High benefit-to-cost ratio (3.92) 2) The main factor contributing to literacy development of ALTUR students was the systematic, sustained, and personalized instruction approach adopted.	Encourage participation of at-risk youth in individualized tutoring, mentoring, and coaching support; experiment with variations of Pathways and design further qualitative research to understand the effects of different program components, recognize the multifaceted dimensions of adolescent literacy development linked to supportive relations at the community, school, family, and peer level; adopt complementary assessment and research methods to address adolescent literacy; promote sustained, systematic, and personalized instruction through culturally relevant, humanistic, and purposeful approaches; promote vocabulary knowledge; reading, writing and learning skills; and critical multimedia engagement based on students' own purposes and interests.

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
beyond 3:30 (Yau et al., 2015)	Comprehensive program providing multiple after-school activities: daily homework club, junior chef's club, sports and recreation; regular specialty programs for creative expression and life skills development. Homework club involved 45-minute sessions provided by program staff, secondary school student volunteers, and student teachers completing their practicums.	Students in grades 7 and 8 in high-needs communities in Toronto (18 schools, approximately 420 students attending).	Mixed methods, using Canadian achievement tests, elementary school report cards, resiliency survey, participant surveys, focus groups, and individual interviews, involving 43 former participants, 77 current participants, 40 parents, 10 school staff, and 13 program staff and student teachers. Descriptive statistics and qualitative analysis focusing on impacts on participants' schooling and learning beyond middle school, holistic lifelong impacts, and ripple effects. Caveat: no triangulation or robustness checks done.	Positive long-term educational impacts (increased preparedness, performance, and high school engagement; post-secondary aspirations). Positive multidimensional, holistic impacts: physical dimension (exercise, food choices); emotional dimension (anger, stress, self-regulation, self-efficacy); and social development dimension (friendships, social circles; family time, communication with parents, sense of safety). Positive spillovers on participating school communities as a whole, students' family dynamics, perceptions of safety and community building in the neighbourhood, and practical experience building and sensitization of student teachers about inner-city students' needs.	Maintain comprehensive, multidimensional program structure, as an on-site, daily after-school program; recruit sensitive and caring staff, minimize turnover, and offer ongoing professional development support; coordinate the program centrally but create platforms and mechanisms for experience-sharing across the school site; engage in close collaboration with school administrators and staff; carry out ongoing research and evaluation throughout the implementation process; establish partnerships with local community members to enrich program activities; ensure funding sustainability.

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
RBC after-school support programs (Mishna et al., 2013)	Multiple after school programs that included academic support and recreational components to encourage engagement, self-esteem, and learning among participants. Activities provided by paid staff and volunteers, with diverse curricula, varying by program site.	109 English and French after-school programs funded by RBC in Canada (all provinces and territories), serving children and youth aged 4–18.	Research was done in two phases. In the first phase, one question in the evaluation reports of all programs was analyzed. The question elicited outcome-oriented responses about the program. In the second phase, 39 interviews were conducted with parents, children and youth, program staff, and RBC foundation members and grant managers. Caveat: details for specific programs are not provided	Three categories of outcomes emerged from the analysis, with overall positive effects: recreational benefits (perceived increase in cooperation, teamwork, problem-solving skills, healthy-living lifestyles, and self-esteem); social benefits (perceived increase in pro-social behaviours, teamwork, and self-esteem); and academic benefits (perceived improvement in key areas such as academic performance, skills, and motivation).	Increase proximity to after-school programs and tailor them based on the economic, cultural, and social resources of the target demographic; implement more rigorous evaluations of program effectiveness.
Teach Your Children Well (Flynn et al., 2012)	Weekly individual tutoring sessions provided by foster parents, with two hours of direct reading instruction, using a full array of curricular materials for learners at different levels; 30 minutes of reading aloud by children and 30 minutes of self-paced, computer-based math instruction. Tutoring associated with a behaviour-management component (rewards points system) and a registered education savings plan (RESP) for future post-secondary education. Foster parents received six hours of pre-intervention training and took part in ongoing consultations with program authors during implementation.	77 students in grades 2–7 living in foster family settings in Ontario.	Randomized controlled trial (RCT): treatment group received tutoring and RESP; control group was waitlisted for the following year. Measures: pre- and post- standardized assessment (Wide Range Achievement Test, fourth edition) and foster parent questionnaire. Covariance analysis. Caveats: Small sample size and specificities of target population.	Treatment group received an average of 63.6 hours of tutoring and experienced statistically significant positive effects on sentence comprehension, math computation, and reading composite, but not on word reading. Overall positive feedback from foster parents, in spite of a number of obstacles mentioned (behaviour problems, time constraints, child's resistance)	Promote the involvement of caregivers in home-based tutoring, targeting those who are motivated and able to implement the program well.

Program & Reference	Program Model	Program Scope, Location, Population Focus	Evaluation Sources & Methods	Reported Outcomes	Recommendations Presented
Licensed to Learn (L2L) (Yau & Archer, 2011)	Dual peer tutoring that offers training to older, higher-achieving students to become certified tutors and offer after-school tutoring to younger, at-risk students as part of a practicum. Training took place over a school term and involved different learning styles, multiple intelligences, and student-centered approaches. Tutoring offered in students' own or a neighbouring school.	40 elementary and secondary schools in Toronto. Report includes data from 262 tutors and 404 peers, across 21 schools.	Mixed methods, using administrative data, program records and a rating survey responded by principals. Descriptive statistics for peer and tutor populations, content analysis of tutor records, and feedback from seven principals on student success, achievement, character development, leadership, and positive relationships. Caveat: no triangulation or robustness checks done.	Program benefits found to go beyond supporting at-risk students, given deliberate efforts to train higher-achieving students to be effective certified tutors, not only in subject matter content, but also for empathetic understanding of learning styles and emotional needs of peers. Overall positive perceptions from tutors and principals. Successful record as credit recovery in one school.	N/A
E-tutoring (Johnson & Bratt, 2008)	A secure internet-based course management system with websites, course content, chat, whiteboard, email, and three 10-minute video conferences between tutor and student pairs. Support provided by an education psychologist, instructional technologist, and school-based technology education teacher. Subject areas include math and English.	10 children aged 7–11 (grades 2–6) in one elementary school; 10 education students as e-tutors working at an elementary school in an urban center in western Canada.	Analysis of websites, video chat blog, emails, and parent and student evaluations. Caveat: no description of systematic data collection or analytical methods.	Children, parents, and e-tutors responded favourably to the evaluations. The content analysis suggested that the interaction between tutors and students was mostly about instruction (as opposed to scheduling, learning needs, or general conversation). All but one instructor said that the best part of e-tutoring was developing a relationship with the tutored student.	N/A
Reading Computer-Assisted Tutoring (CAT) Program (Chambers et al., 2001)	An electronic information hub where at-risk students are exposed to the reading materials they are learning in class. Instructional activities are designed so that students receive immediate feedback. Additional reading instruction strategies include modelling, prompting, and reinforcing classroom learning.	12 tutors in four schools and 25 students in grades 1 and 2 that worked on the Reading CAT for their 20-minute tutoring sessions. Location not specified, but likely in Quebec.	The design team of Reading CAT observed the use of the program (the evaluation sessions were recorded), administered a questionnaire to the tutors, and conducted interviews with tutors and students. Caveat: no description of systematic data collection or analytical methods.	Students and tutors were happy with the program and, on average, reported that it was easy to use, had high educational value, was motivational, and helped children to read.	Increase access to computers and internet in schools (Note: the study is from 2001; the situation is certainly different 20 years later).

References

Allensworth, E., & Easton, J. Q. (2007). *What matters for staying on-track and graduating in Chicago Public High Schools*. Consortium on Chicago School Research. https://consortium.uchicago.edu/publications/what-matters-staying-track-and-graduating-chicago-public-schools

AmeriCorps. (n.d.). *AmeriCorps—American Rescue Plan*. Retrieved April 21, 2021, from https://americorps.gov/

Ander, R., Guryan, J., & Ludwig, J. (2016). *Improving academic outcomes for disadvantaged students: scaling up individualized tutorials* [Policy Proposal]. Brookings/The Hamilton Project. https://www.hamiltonproject.org/assets/files/improving_academic_outcomes_for_disadvantaged_students_pp.pdf

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

Appau, S., & Awaworyi Churchill, S. (2019). Charity, volunteering type and subjective wellbeing. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations, 30*(5), 1118–1132. https://doi.org/10.1007/s11266-018-0009-8

Aurini, J., Davies, S., & Dierkes, J. (Eds.). (2013). Out of the shadows: The global intensification of supplementary education. In *International Perspectives on Education and Society* (Vol. 22, p. i). Emerald Group Publishing Limited. https://doi.org/10.1108/S1479-3679(2013)0000022016

Bailey, D. H., Duncan, G. J., Murnane, R. J., & Au Yeung, N. (2021). Achievement gaps in the wake of COVID-19. *Educational Researcher, 50*(5), 266–275. https://doi.org/10.3102/0013189X211011237

Balfanz, R., & Byrnes, V. (2020). *Connecting social-emotional development, academic achievement and on-track outcomes: A multi-district study of grades 3 to 10 students supported by City Year AmeriCorps members.* The Everyone Graduates Centre at the Johns Hopkings University School of Education. https://www.cityyear.org/wp-content/uploads/2020/05/EGC_CityYearReport_BalfanzByrnes.pdf

Baye, A., Inns, A., Lake, C., & Slavin, R. (2019). A synthesis of quantitative research on reading programs for secondary students. *Reading Research Quarterly, 54*(2), 133–166. https://doi.org/10.1002/rrq.229

Beckett, M., Borman, G., Capizzano, J., Parsley, D., Ross, S., Schirm, A., & Taylor, J. (2009). *Structuring out of school time to improve academic achievement: A practice guide* (NCEE #2009-012). Institute for Education Sciences. https://ies.ed.gov/ncee/wwc/PracticeGuide/10

Belfield, C. (2013). *The economic value of national service*. Columbia University Centre for Cost-Benefit Analysis in Education. https://voicesforservice.org/research-and-reports/economic-value-national-service/

Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4–16.

Booth, S. (2021, March 5). National Tutoring Programme's northern challenge revealed. *Schools Week*. https://schoolsweek.co.uk/data-reveals-scale-of-national-tutoring-programmes-northern-challenge/

Borgonovi, F. (2008). Doing well by doing good. The relationship between formal volunteering and self-reported health and happiness. *Social Science & Medicine, 66*(11), 2321–2334. https://doi.org/10.1016/j.socscimed.2008.01.011

Bray, M. (2009). *Confronting the shadow education system: What government policies for what private tutoring?* UNESCO/IIEP. https://unesdoc.unesco.org/ark:/48223/pf0000185106/PDF/185106eng;%20por.pdf.multi

Bray, M. (2014). The impact of shadow education on student academic achievement: Why the research is inconclusive and what can be done about it. *Asia Pacific Education Review, 15*(3), 381–389. https://doi.org/10.1007/s12564-014-9326-9

Bray, M. (2017). Schooling and its supplements: changing global patterns and implications for comparative education. *Comparative Education Review, 61*(3), 469–491. https://doi.org/10.1086/692709

Breslin, T. (2021). *Lessons from Lockdown: The educational legacy of COVID-19*. Routledge. https://doi.org/10.4324/9781003121343

Brown, K. M., Hoye, R., & Nicholson, M. (2012). Self-esteem, self-efficacy, and social connectedness as mediators of the relationship between volunteering and well-being. *Journal of Social Service Research, 38*(4), 468–483. https://doi.org/10.1080/01488376.2012.687706

Brown, R. S. (2006). *TDSB Secondary Success Indicators, 2005-05*. Toronto District School Board. https://www.tdsb.on.ca/Portals/research/docs/reports/SecondaryStudentSuccess%20Indicators2004-5.pdf

Burch, P., Good, A., & Heinrich, C. (2016). Improving access to, quality and the effectiveness of digital tutoring in K-12 education. *Educational Evaluation and Policy Analysis, 38*(1), 65–87. https://doi.org/10.3102/0162373715592706

Bushnik, T., Tjepkema, M., & Martel, L. (2020). *Socioeconomic disparities in life and health expectancy in among the household population in Canada*. Statistics Canada. https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2020001/article/00001-eng.pdf?st=YKaZjmU-

Byun, S. (2014). Shadow education and academic success in Republic of Korea. In H. Park & K. Kim (Eds.), *Korean Education in Changing Economic and Demographic Contexts* (pp. 39–58). Springer. https://doi.org/10.1007/978-981-4451-27-7_3

Canadian Teachers Federation. (2020). *Canadian teachers experiencing a mental health crisis*. CTF. https://www.ctf-fce.ca/canadian-teachers-experiencing-a-mental-health-crisis/

Carlana, M., & Ferrara, E. L. (2021). *Apart but connected: Online tutoring and student outcomes during the COVID-19 Pandemic* [EdWorkingPaper No. 21-350]. https://doi.org/10.26300/0azm-cf65

Chambers, B., Abrami, P. C., McWhaw, K., & Therrien, M. C. (2001). Developing a computer-assisted tutoring program to help children at risk learn to read. *Educational Research and Evaluation, 7*(2–3), 223–239. https://doi.org/10.1076/edre.7.2.223.3863

Choi, Y. (2018). The heterogeneous effects of shadow education on SAT scores. *Development and Society*, 47(3), 451–476.

Choi, Y., & Park, H. (2016). Shadow education and educational inequality in South Korea: Examining effect heterogeneity of shadow education on middle school seniors' achievement test scores. *Research in Social Stratification and Mobility, 44*, 22–32. https://doi.org/10.1016/j.rssm.2016.01.002

Chow, R., & Libby, J. (2017). An evaluation of Crescent School vLearning – an online peer-tutoring program. *International Journal on Disability and Human Development, 16*(1), 55–57. https://doi.org/10.1515/ijdhd-2016-0005

City Year. (n.d.). *Help students become who they'll be tomorrow*. City Year. Retrieved August 6, 2021, from https://www.cityyear.org/

Clandfield, D., Curtis, B., Galabuzi, G.-E., San Vicente, A. G., Livingstone, D. W., & Smaller, H. (2014). Restacking the deck: Streaming by class, race and gender in Ontario schools. *Our Schools, Ourselves* (special edition), 23(2). https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2014/02/osos114_cover_TOC_Intro.pdf

Cohen, P. A., Kulik, J. A., & Kulik, C.-L. C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal, 19*(2), 237–248.

Cook, P., Dodge, K., Farkas, G., Fryer, R., Guryan, J., Ludwig, J., Mayer, S., Pollack, H., & Steinberg, L. (2014). *The (surprising) efficacy of academic and behavioral intervention with disadvantaged youth: Results from a randomized experiment in Chicago* [NBER Working Paper No. w19862]. National Bureau of Economic Research. https://doi.org/10.3386/w19862

Cullen, C. (2020, July 9). Volunteer placements on pause as Liberals try to restart troubled student grant program. *CBC News*. https://www.cbc.ca/news/politics/we-charity-student-volunteer-program-1.5642642

Cumming, A. (Ed.) (2012). *Adolescent literacies in a multicultural context*. Routledge. https://doi.org/10.4324/9780203120033

Dang, H.-A., & Rogers, F. H. (2008). The growing phenomenon of private tutoring: Does it deepen human capital, widen inequalities, or waste resources? *The World Bank Research Observer, 23*(2), 161–200. https://doi.org/10.1093/wbro/lkn004

Davies, S., & Aurini, J. (2004). The transformation of private tutoring: Education in a franchise form. *Canadian Journal of Sociology, 29*(3), 419–438.

Davies, S., & Aurini, J. (2006). The franchising of private tutoring: A view from Canada. *Phi Delta Kappan, 88*(2), 123–128. https://doi.org/10.1177/003172170608800209

Deitrichson, J., Bog, M., Filges, T., & Klint Jorgenson, A. M. (2017). Academic interventions for elementary and middle school students with low socio-economic status: A systematic review and meta-analysis. *Review of Educational Research, 87*(2), 243–282.

Deller, F. (2018). *Early intervention programs for low income students: What can evaluations reveal: A systematic review* [Doctoral dissertation, University of Toronto]. https://tspace.library.utoronto.ca/bitstream/1807/89837/3/Deller_Fiona_201806_PhD_thesis.pdf

Department for Education. (2019). *National curriculum assessments at key stage 2 in England, 2019 (revised)*. GOV.UK. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/851798/KS2_Revised_publication_text_2019_v3.pdf

Department for Education. (2020). *Catch up premium*. GOV.UK. https://www.gov.uk/government/publications/catch-up-premium-coronavirus-covid-19/catch-up-premium

Dion, E., Fuchs, D., & Fuchs, L.S. (2005). Differential effects of peer-assisted learning strategies on students' social preference and friendship making. *Behavioural Disorders, 30*(4), 421–429.

Dominguez, N. (2017). A Research analysis of the underpinnings, practice, and quality of mentoring programs and relationships. In D. Clutterbuck, F. Kochan, L. Lunsford, N. Dominguez, & J. Haddock-Millar (Eds.), *The SAGE handbook of mentoring* (pp. 67–85). SAGE Publications Ltd. http://dx.doi.org/10.4135/9781526402011

Dove, N., Wong, J., Gustafson, R., & Corniel, T. (2020). *Impact of school closures on learning, child and family well-being during the COVID-19 pandemic*. British Columbia Centre for Disease Control. http://www.bccdc.ca/Health-Info-Site/Documents/Public_health_COVID-19_reports/Impact_School_Closures_COVID-19.pdf

Education and Skills Funding Agency. (n.d.). *16 to 19 funding: 16 to 19 tuition fund*. GOV.UK. Retrieved April 17, 2021, from https://www.gov.uk/guidance/16-to-19-funding-16-to-19-tuition-fund

Education and Skills Funding Agency. (2021). *16 to 19 funding: 16 to 19 tuition fund - Guidance*. GOV.UK. https://www.gov.uk/guidance/16-to-19-funding-16-to-19-tuition-fund

Education Policy Institute. (2021, June 2). *EPI responds to the government's education recovery package*. https://epi.org.uk/comments/epi-responds-to-the-governments-new-education-recovery-package/

Elbaum, B., Vaughn, S., Hughes, M. T., & Moody, S. W. (2000). How effective are one-to-one tutoring programs in reading for elementary students at risk for reading failure? A meta-analysis of the intervention research. *Journal of Educational Psychology, 92*(4), 605–619.

Employment and Social Development Canada. (2019). *Canadian occupational projection system*. Government of Canada. http://occupations.esdc.gc.ca/sppc-cops/l.3bd.2t.1ils@-eng.jsp

Enjolras, B. (2015). *The impact of volunteering on volunteers in 23 European countries* [TSI Working Paper No. 04/2015]. Third Sector Impact. https://thirdsectorimpact.eu/site/assets/uploads/documentations/tsi-working-paper-no-3-the-impact-of-volunteering-on-volunteers-in-23-european-countries/TSI_WP4_ImpactVolunteering.pdf

Exley, S. (2021). Locked in: Understanding the 'irreversibility' of powerful private supplementary tutoring markets. *Oxford Review of Education*, 1–17. https://doi.org/10.1080/03054985.2021.1917352

Eurydice. (2020, October 8). Extra money to catch up on learning lost due to school closures. *European Commission*. https://eacea.ec.europa.eu/national-policies/eurydice/content/national-reforms-school-education-47_en

Ferguson, D. (2021, Feb. 28). England's 'catch-up' tutors are being short-changed by private employers. *The Guardian*. http://www.theguardian.com/education/2021/feb/28/englands-catch-up-tutors-are-being-short-changed-by-private-employers

Ferguson, R. F., Phillips, S. F., Rowley, J. F. S., & Friedlander, J. W. (2015). *The influence of teaching: Beyond standardized test scores a study of 16,000 sixth through ninth grade classrooms*. Harvard University Achievement Gap Initiative.

Flynn, R. J., Marquis, R. A., Paquet, M.-P., Peeke, L. M., & Aubry, T. D. (2012). Effects of individual direct-instruction tutoring on foster children's academic skills: A randomized trial. *Children and Youth Services Review, 34*(6), 1183–1189. https://doi.org/10.1016/j.childyouth.2012.01.036

Fryer, R. (2016). *The production of human capital in developed countries: Evidence from 196 Randomized Field Experiments* (No. w22130; p. w22130). National Bureau of Economic Research. https://doi.org/10.3386/w22130

Fuchs, D., Fuchs, L. S., & Burish, P. (2000). Peer-assisted learning strategies: An evidence-based practice to promote reading achievement. *Learning Disabilities Research & Practice, 15*(2), 85–91. https://doi.org/10.1177/0022466905 0390010401

Galbraith, J., & Winterbottom, M. (2011). Peer-tutoring: What's in it for the tutor? *Educational Studies, 37*(3), 321–332.

Gallagher-Mackay, K., & Brown, R. S. (2021). *The impact of school closures and emergency remote learning on grade 12 students in spring 2020: Preliminary findings from 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., Srivastava, P., Underwood, K., Dhuey, E., McCready, 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

Gersten, R., Rolfhus, E., Clarke, B., Decker, L. E., Wilkins, C., & Dimino, J. (2015). Intervention for first-graders with limited number knowledge: Large scale replication of a randomized control trial. *American Educational Research Journal, 52*(3), 516–546.

Glass, G. V. (1977). Integrating findings: The meta-analysis of research. *Review of Research in Education, 5*, 351–379.

Global Industry Analysts. (2020). *Private tutoring global market trajectory and analytics*. https://www.strategyr.com/market-report-private-tutoring-forecasts-global-industry-analysts-inc.asp

Griffith, M. (2021). An unparalleled investment in U.S. public education: Analysis of the American Rescue Plan Act of 2021. *Learning Policy Institute*. https://learningpolicyinstitute.org/blog/covid-analysis-american-rescue-plan-act-2021

Guill, K., Luedtke, O., & Koeller, O. (2020). Assessing the instructional quality of private tutoring and its effects on student outcomes: Analyses from the German National Educational Panel Study. *British Journal of Educational Psychology, 90*(2), 282–300. https://doi.org/10.1111/bjep.12281

Guo, Y., Chen, Q., Zhai, S., & Pei, C. (2020). Does private tutoring improve student learning in China? Evidence from the China Education Panel Survey. *Asia & the Pacific Policy Studies, 7*(3), 322–343. https://doi.org/10.1002/app5.310

Guryan, J., Ludwig, J., Bhatt, M., Cook, P., Davis, J. M. V., Dodge, K., Farkas, G., Fryer, R., Mayer, S., Pollack, H., & Steinberg, L. (2021). *Not too late: Improving academic outcomes among adolescents* [NBER Working Paper No. w28531]. National Bureau of Economic Research. https://doi.org/10.3386/w28531

Ha, Y., & Park, H.-J. (2017). Can after-school programs and private tutoring help improve students' achievement? Revisiting the effects in Korean secondary schools. *Asia Pacific Education Review, 18*(1), 65–79. https://doi.org/10.1007/s12564-016-9451-8

Hallsén, S., & Karlsson, M. (2019). Teacher or friend? – Consumer narratives on private supplementary tutoring in Sweden as policy enactment. *Journal of Education Policy, 34*(5), 631–646. https://doi.org/10.1080/02680939.2018.1458995

Harris, D. N. (2009). Toward policy-relevant benchmarks for interpreting effect sizes: Combining Effects with costs. *Educational Evaluation and Policy Analysis, 31*(1), 3–29. https://doi.org/10.3102/0162373708327524

Hattie, J. (2009). *Visible Learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge. https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/

Hattie, J. (n.d.). Visible Learning. *Hattie ranking: 252 Influences and effect sizes related to student achievement*. https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/

Hawkins, B. (2021, August 5). With up to 9 grade levels per class, can schools handle the fallout from COVID's K-shaped recession. *T74*. https://www.the74million.org/article/with-up-to-9-grade-levels-per-class-can-schools-handle-the-fallout-from-covids-k-shaped-recession/

He, Y., Zhang, Y., Ma, X., & Wang, L. (2021). Does private supplementary tutoring matter? The effect of private supplementary tutoring on mathematics achievement. *International Journal of Educational Development, 84*, 102402. https://doi.org/10.1016/j.ijedudev.2021.102402

Heinrich, C. J., Meyer, R. H., & Whitten, G. (2010). Supplemental education services under No Child Left Behind: who signs up, and what do they gain? *Educational Evaluation and Policy Analysis, 32*(2), 273–298. https://doi.org/10.3102/0162373710361640

Hickey, A. J., & Flynn, R. J. (2019). Effects of the TutorBright tutoring programme on the reading and mathematics skills of children in foster care: A randomised controlled trial. *Oxford Review of Education, 45*(4), 519–537. https://doi.org/10.1080/03054985.2019.1607724

Hill, C. J., Bloom, H. S., Black, A. R., & Lipsey, M. W. (2008). Empirical benchmarks for interpreting effect sizes in research. *Child Development Perspectives, 2*(3), 172–177. https://doi.org/10.1111/j.1750-8606.2008.00061.x

Hof, S. (2014). Does private tutoring work? The effectiveness of private tutoring: a nonparametric bounds analysis. *Education Economics, 22*(4), 347–366. https://doi.org/10.1080/09645292.2014.908165

Jacob, R., Armstrong, C., Bowden, A. B., & Pan, Y. (2016). Leveraging volunteers: An experimental evaluation of a tutoring program for struggling readers. *Journal of Research on Educational Effectiveness, 9*(sup1), 67–92. https://doi.org/10.1080/19345747.2016.1138560

James, C. E. (2020). *Racial inequity, COVID-19 and the education of Black and other marginalized students*. https://rsc-src.ca/en/covid-19/impact-covid-19-in-racialized-communities/racial-inequity-covid-19-and-education-black-and

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/

Jansen, D., Elffers, L., & Jak, S. (2021). A cross-national exploration of shadow education use by high and low SES families. *International Studies in Sociology of Education, 0*(0), 1–22. https://doi.org/10.1080/09620214.2021.1880332

Johnson, G., & Bratt, S. (2008). Technology education students: E-tutors for school children. *British Journal of Educational Technology, 40*, 32–41. https://doi.org/10.1111/j.1467-8535.2007.00805.x

Jones, G., Ostojic, D., Menard, J., Picard, E., & Miller, C. J. (2017). Primary prevention of reading failure: Effect of universal peer tutoring in the early grades. *The Journal of Educational Research, 110*(2), 171–176. https://doi.org/10.1080/00220671.2015.1060929

Jordan, P. (2021). What congressional Covid funding means for K-12 schools. *FutureEd*. https://www.future-ed.org/what-congressional-covid-funding-means-for-k-12-schools/

Kim, E., Goodman, J., & West, M. R. (2021). *Kumon in: The recent, rapid rise of private tutoring centers* [EdWorkingPaper No. 21-367]. Annenberg Institute at Brown University. https://www.edworkingpapers.com/index.php/ai21-367

Kortekaas-Rijlaarsdam, A. F., Ehren, M., & Meeter, M. (n.d.). *Catch-up programmes in primary education in the Netherlands: Overview of programmes (first tranche) and a literature review of effectiveness of programmes*. https://www.researchinstitutelearn.nl/wp-content/uploads/2020/12/new-Effectiviteit-van-inhaal-en-ondersteuningsprogrammas-om-onderwijsachterstanden-in-te-halen_Engels.pdf

Kraft, M. A., & Falken, G. (2020). *A blueprint for scaling tutoring across public schools* [EdWorkingPaper No. 20-335]. Annenberg Institute at Brown University. https://doi.org/10.26300/dkjh-s987

Kulik, J. A., & Fletcher, J. D. (2016). Effectiveness of intelligent tutoring systems: A meta-analytic review. *Review of Educational Research, 86*(1), 42–78. http://dx.doi.org.libproxy.wlu.ca/10.3102/0034654315581420

Lauer, P. A., Akiba, M., Wilkerson, S. B., Apthorp, H. S., Snow, D., & Martin-Glenn, M. L. (2006). Out-of-school-time programs: A meta-analysis of effects for at-risk students. *Review of Educational Research, 76*(2), 275–313. https://doi.org/10.3102/00346543076002275

LePage, B., & Jordan, P. (2021, July 14). How are states spending their COVID education relief funds? *T74*. https://www.the74million.org/article/how-are-states-spending-their-covid-education-relief-funds/

Leung, K. C. (2019). An updated meta-analysis on the effect of peer tutoring on tutors' achievement. *School Psychology International, 40*(2), 200–214. https://doi.org/10.1177/0143034318808832

Liu, J., & Bray, M. (2017). Understanding shadow education from the perspective of economics of education. In G. Johnes, J. Johnes, T. Agasisti, & L. López-Torres (Eds.), *Handbook of Contemporary Education Economics* (pp. 398–415).

Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus, M. N., Borwick, C., & Crawley, E. (2020). Rapid systematic review: The impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *Journal of the American Academic of Child and Adolescent Psychiatry, 59*(11), 1218–1239.

Loyalka, P., & Zakharov, A. (2016). Does shadow education help students prepare for college? Evidence from Russia. *International Journal of Educational Development, 49*, 22–30. Scopus. https://doi.org/10.1016/j.ijedudev.2016.01.008

Miller, A. (2020, June 6). Canada has an army of volunteers ready to help fight COVID-19—So why aren't we using them? *CBC News*. https://www.cbc.ca/news/health/covid19-canada-volunteers-1.5600484

Ministry of Education. (2020). *Ontario helping students learn from the safety of their own home* [Press release]. Government of Ontario. https://news.ontario.ca/en/release/56396/ontario-helping-students-learn-from-the-safety-of-their-own-home

Ministry of Education, Culture and Science. (n.d.). *Nationaal Programma Onderwijs* [National Education Program]. Ministerie van Onderwijs, Cultuur en Wetenschap, the Netherlands. Retrieved August 3, 2021, from https://www.nponderwijs.nl/

Ministry of Education, Culture and Science. (2021, January 22). *Kamerbrief over programma voor funderend onderwijs tijdens en na de coronacrisis* [Letter to Parliament about program for basic education during and after the coronavirus crisis]. Ministerie van Onderwijs, Cultuur en Wetenschap, the Netherlands. https://www.rijksoverheid.nl/documenten/kamerstukken/2021/01/22/funderend-onderwijs-tijdens-en-na-de-coronacrisis-een-nationaal-programma

Mishna, F., Root, J., Abboud, R., Daciuk, J., MacDonald, K., Kasianik, I., Teske, C., & Tufford, L. (2013). *The RBC Foundation after-school programs evaluation* (p. 50). Factor-Inwentash Faculty of Social Work, University of Toronto. http://www.rbc.com/community-sustainability/community/after-school-grants/RBC-Foundation-After-School-Programs-Evaluation.pdf

Mo, C. H., & Conn, K. M. (2018). When do the advantaged see the disadvantages of others? A quasi-experimental study of national service. *American Political Science Review, 112*(4), 721–741. https://doi.org/10.1017/S0003055418000412

Mundy, K., Prouxl, K., Janigan, K., Geva, E., & Fraser, C. (2014). *An evaluation of the Child-to-Child School Readiness Programme in Ethiopia*. UNICEF Ethiopia. https://www.unicef.org/ethiopia/media/1416/file/Evaluation%20study%20on%20the%20early%20learning%20Child-to-Child%20Programme%20in%20Ethiopia%20.pdf

National Association of Head Teachers. (2021, June 17). Tutoring is a top priority for education recovery – but not via the National Tutoring Programme, say school leaders. *NAHT*. https://www.naht.org.uk/News/Latest-comments/News/ArtMID/556/ArticleID/1009/Tutoring-is-a-top-priority-for-education-recovery-but-not-via-the-National-Tutoring-Programme-say-school-leaders

National Audit Office. (2021). *Support for children's education during the early stages of the Covid-19 pandemic*. National Audit Office (UK). https://www.nao.org.uk/wp-content/uploads/2021/03/Support-for-childrens-education-during-the-early-stages-of-the-Covid-19-pandemic.pdf

National Mentoring Resource Center. (n.d.). Experience Corps Insights. *National Mentoring Resource Center*. Retrieved August 4, 2021, from https://nationalmentoringresourcecenter.org/resource/experience-corps/

National Statistics. (2021, June 17). *Schools, pupils and their characteristics, Academic Year 2020/21*. Explore Education Statistics, GOV.UK. https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics

National Tutoring Programme. (n.d.). *National Tutoring Programme*. NTP. Retrieved April 10, 2021, from https://nationaltutoring.org.uk/

National Tutoring Programme. (2020). *Guide to approved tuition partners 2020-21*. https://d3vgwsfdkj1ams.cloudfront.net/documents/NTP-Guide-to-approved-Tution-Partners-2020-21_2020-11-27-162657_1.pdf?mtime=20201207170317&focal=none

National Tutoring Programme. (n.d.). *Best tutoring practice: Briefing for schools*. https://d3vgwsfdkj1ams.cloudfront.net/documents/Best_Tutoring_Practice_Briefing_For_Schools.pdf?mtime=20200901093621&focal=none

Neitzel, A. J., Lake, C., Pellegrini, M., & Slavin, R. (2021). A synthesis of quantitative research on programs for struggling readers in elementary schools. *Reading Research Quarterly*. https://doi.org/10.1002/rrq.379

Nickow, A., Oreopoulos, P., & Quan, V. (2020). *The impressive effects of tuoring on PreK-12 learning: A systematic review and meta-analysis of the experimental evidence* [NBER Working Papers No. 27476]. National Bureau of Economic Research. https://www.nber.org/papers/w27476

NSW Department of Education. (2021a, January 19). *COVID ILSP - Module 1 - Introduction* [Video]. https://vimeo.com/502416743

NSW Department of Education. (2021b, March 3). *Students benefit from tutoring program*. https://education.nsw.gov.au/news/latest-news/students-benefit-from-tutoring-program.html

NSW Department of Education. (2021c, April 1). *COVID intensive learning support program*. https://education.nsw.gov.au/teaching-and-learning/curriculum/covid-learning-support-program.html

Nuffield Foundation. (n.d.). *Nuffield Foundation*. Retrieved April 17, 2021, from https://www.nuffieldfoundation.org/

Organisation for Economic Cooperation and Development [OECD]. (2020). *Workforce innovation to foster positive learning environments in Canada*. https://www.oecd-ilibrary.org/employment/workforce-innovation-to-foster-positive-learning-environments-in-canada_a92cf94d-en

OECD. (2021). *Canada Coronavirus education country note*. https://www.oecd.org/education/Canada-coronavirus-education-country-note.pdf

Okilwa, N. S. A., & Shelby, L. (2010). The effects of peer tutoring on academic performance of students with disabilities in grades 6 through 12: A synthesis of the literature. *Remedial and Special Education, 31*(6), 450–463. https://doi.org/10.1177/0741932509355991

Oreopoulos, P., Brown, R. S., & Lavecchia, A. M. (2017). Pathways to education: An integrated approach to helping at-risk high school students. *Journal of Political Economy, 125*(4), 947–984.

Park, H., Buchmann, C., Choi, J., & Merry, J. J. (2016). Learning beyond the school walls: Trends and implications. *Annual Review of Sociology, 42*(1), 231–252. https://doi.org/10.1146/annurev-soc-081715-074341

Pellegrini, M., Lake, C., Neitzel, A., & Slavin, R. (2021). Effective programs in elementary mathematics: A meta-analysis. *AERA Open, 7*, 233285842098621. https://doi.org/10.1177/2332858420986211

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

Presse Canadienne. (2021, January 27). Quebec unveils details of tutor recruitment program. *Montreal Gazette*. https://montrealgazette.com/news/local-news/quebec-unveils-details-of-tutor-recruitment-program

Pressley, T. (2021). Factors contributing to teacher burnout during COVID-19. *Educational Researcher, 50*(5), 325–327. https://doi.org/10.3102/0013189X211004138

Quint, J. C., Balu, R., DeLaurentis, M., Rappaport, S., Smith, T. J., & Zhu, P. (2013). *The success for all model of school reform: Early findings from the Investing in Innovation (i3) Scale-Up* (p. 158). MRDC. https://www.mdrc.org/sites/default/files/The_Success_for_All_Model_FR_0.pdf

Randhawa, J. (2021). *Reducing the disparities in math performance and confidence among students with learning disabilities: An analysis of the JUMP Math online tutoring program*. Ontario Trillium Foundation. https://ldaniagara.org/wp-content/uploads/2021/03/JUMP-Math-Resport-FINAL.pdf

Reading Partners. (n.d.). *Reading Partners*. Retrieved April 21, 2021, from https://readingpartners.org/our-impact/program-impact/

Reichhardt, R., McClelland, A., Hill, J., & DeCesare, D. (2017). *Expanding opportunities to successfully support early readers: A five-year study of Reading Partners Colorado*. Augenblick, Palaich and Associates. https://americorps.gov/sites/default/files/evidenceexchange/Reading%20Partners%20SIF%20Study%20Final%20Report%20%28July%202018%29_508_1.pdf

Ritter, G. W., Barnett, J. H., Denny, G. S., & Albin, G. R. (2009). The effectiveness of volunteer tutoring programs for elementary and middle school students: A meta-analysis. *Review of Educational Research, 79*(1), 3–38.

Robinson, C. D., Kraft, M., Loeb, S., & Schuler, B. (2021). Accelerating student learning with high-dosage tutoring. EdResearch for Recovery. https://annenberg.brown.edu/sites/default/files/EdResearch_for_Recovery_Design_Principles_1.pdf

Robinson, C. D., & Loeb, S. (2021). *High-impact tutoring: State of the research and priorities for future learning* [EdWorkingPaper No. 21-384]. Annenberg Institute at Brown University. https://doi.org/10.26300/QF76-RJ21

Roschelle, J., Cheng, B. H., Hodkowski, N., Neisler, J., & Haldar, L. (2020). *Evaluation of an online tutoring program in elementary mathematics*. Digital Promise. https://doi.org/10.51388/20.500.12265/94

Rowen, N. (2012). Pathways to education and its accomplishments. In A. Cumming (Ed.), *Adolescent literacies in a multicultural context* (1st ed.). Routledge.

Saga Education. (n.d.). *Saga Education*. Retrieved April 21, 2021, from https://www.sagaeducation.org/data

Science, M., Thampi, N., Bitnun, A., Allen, U., Birken, C., Blackman, N., Cohen, E., Dubey, V., Dye, L., Gallagher-Mackay, K., Greer, A., Katz, G. M., Khan, S., Kim, J., Korczak, D., Leifso, K., MacDonald, L. M., Maltsev, A., McCready, J., … Barrett, K. (2021). *School operation for the 2021-2022 academic year in the context of the COVID-19 pandemic*. Ontario COVID-19 Science Advisory Table. https://doi.org/10.47326/ocsat.2021.02.38.1.0

Slavin, R. (1980). Cooperative learning. *Review of Educational Research, 50*(2), 315–342.

Slavin, R. (2018, April 5). New findings on tutoring: Four shockers. *Robert Slavin's Blog*. https://robertslavinsblog.wordpress.com/2018/04/05/new-findings-on-tutoring-four-shockers/

Slavin, R. (2020, June 18). Are the Dutch solving the Covid slide with tutoring? *Robert Slavin's Blog*. https://robertslavinsblog.wordpress.com/2020/06/18/are-the-dutch-solving-the-covid-slide-with-tutoring/

Slavin, R., Lake, C., & Groff, C. (2009). Effective programs in middle and high school mathematics: A best-evidence synthesis. *Review of Educational Research, 79*(2), 839–911.

Son, J., & Wilson, J. (2012). Volunteer work and hedonic, eudemonic, and social well-being. *Sociological Forum, 27*(3), 658–681. https://doi.org/10.1111/j.1573-7861.2012.01340.x

Song, Y., Loewenstein, G., & Shi, Y. (2018). Heterogenous effects of peer tutoring: Evidence from rural Chinese middle schools. *Research in Economics, 72*(1), 33–48.

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

Steenbergen-Hu, S., & Cooper, H. (2013). A meta-analysis of the effectiveness of intelligent tutoring systems on K–12 students' mathematical learning. *Journal of Educational Psychology, 105*(4), 970–987. http://dx.doi.org.libproxy.wlu.ca/10.1037/a0032447

Stenhoff, D. M., & Lignugaris/Kraft, B. (2007). A review of the effects of peer tutoring on students with mild disabilities in secondary settings. *Exceptional Children, 74*(1), 8–30. https://doi.org/10.1177/001440290707400101

Sunderman, G. & Kim, J. (2004). *Expansion of federal power in American education: Federal-State Relationships Under the No Child Left Behind Act, Year One*. Harvard Civil Rights Project. https://files.eric.ed.gov/fulltext/ED489169.pdf

Teach First. (n.d.). *Academic mentoring programme*. Retrieved April 16, 2021, from https://www.teachfirst.org.uk/knowledge-base/academic-mentoring-programme

Torgerson, C., Ainsworth, H., Buckley, H., Hampden-Thompson, G., Hewitt, C., Humphry, D., Jefferson, L., Mitchell, N., & Torgerson, D. (2016). *Affordable online maths tuition: Evaluation report and executive summary*. Education Endowment Foundation. https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/Affordable_Maths.pdf

Turcotte, M. (2015). *Political participation and civic engagement of youth* [Catalogue no. 75-006-X]. Statistics Canada. https://www150.statcan.gc.ca/n1/pub/75-006-x/2015001/article/14232-eng.pdf

TVO. (2020). *TVO Annual Report 2019-20*. TVO. https://assets.tvo.org/prod/s3fs-public/TVO%20Annual%20Report%2019-20%20English.pdf?Aj5KSw7rB8UEVptKoWuJeTMBSgC8Qggweport%2019-20%20English.pdf

UNESCO. (n.d.). *Global monitoring of school closures caused by COVID-19*. Retrieved July 30, 2021, from http://covid19.uis.unesco.org/global-monitoring-school-closures-covid19/

Urban, M. C., & Johal, S. (2020). *Understanding the future of skills: Trends and global policy responses*. Public Policy Forum, Future Skills Centre, Diversity Institute. https://fsc-ccf.ca/wp-content/uploads/2020/01/UnderstandingTheFutureOfSkills-PPF-JAN2020-EN.pdf

U.S. Government Accountability Office. (2006). *No Child Left Behind Act: Education actions needed to improve local implementation and state evaluation of supplemental educational services*. https://www.gao.gov/products/gao-06-758

Vaghela, J. F., Wanjari, P., Gupta, V., Banerjee, S., & Bahadur, R. (2021). Child to child education programme: A model for overall development of school going students of poorer communities. *Journal of Advanced Research in English & Education, 5*(1), 1–11.

Victoria Department of Education and Training. (n.d.). *Tutor Learning Initiative 2021*. Retrieved April 18, 2021, from https://www2.education.vic.gov.au/pal/tutor-learning-initiative-2021/guidance/references

Walker, P., & Hall, R. (2021, June 2). Pupils in England to be offered 100m hours of tuition in Covid catch-up plan. *The Guardian*. http://www.theguardian.com/education/2021/jun/02/pupils-to-be-offered-100m-hours-of-tuition-in-covid-catch-up-plan

Weale, S. (2021, March 19). UK tutoring scheme uses under-18s in Sri Lanka paid as little as £1.57 an hour. *The Guardian*. http://www.theguardian.com/education/2021/mar/19/uk-tutoring-scheme-uses-sri-lankan-under-18s-paid-as-little-as-157-an-hour

What Works Clearinghouse. (2009). *Intervention report: Middle school math cognitive tutor*. Institute for Education Sciences. https://files.eric.ed.gov/fulltext/ED506042.pdf

Wong, J. (2021, May 17). With summer vacation looming, educators worry about lasting fallout of pandemic schooling. *CBC*. https://www.cbc.ca/news/canada/teacher-questionnaire-pandemic-yearend-1.6025149

Yau, M., & Archer, B. (2011). Licensed to Learn (L2L): A peer tutor program benefiting both student tutors and peers. *TDSB Research Today, 7*(2), 4.

Yau, M., Archer, B., Wong, J., Walter, S., Bonsu, V., & Sauriol, D. (2015). *Beyond 3:30: A multi-purpose after school program for inner-city middle schools, phase iv evaluation* [Report No. 15/16-10]. Toronto District School Board. https://www.tdsb.on.ca/Portals/research/docs/reports/B330Phase4EvalFeb19.pdf

Yau, M., Mundy, K., Gallagher-Mackay, K., & Ta, T. (2021). *An ecosystem map and analysis of community-based tutoring in Toronto*. Diversity Institute, Future Skills Centre, Ontario Institute for Studies in Education, Wilfrid Laurier University. https://www.ryerson.ca/diversity/reports/an-ecosystem-map-and-analysis-of-community-based-tutoring-in-toronto/

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