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The Implications of Virtual Teaching and Learning in Ontario's Publicly Funded Schools, K-12

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

The COVID-19 pandemic generated a need for emergency virtual learning, presenting a unique opportunity to learn more about the impact of virtual models of learning on the wellbeing of educators, students and their families, as well as student academic success. Given the inextricable connection between wellbeing and academic achievement (Miller, Connolly, & Maguire, 2013), the current evaluation set out to explore two research questions:

> ***Research Question 1:*** *What are the systemic and long-term implications of virtual teaching and learning for educators and students in K-12 settings?*
>
> ***Research Question 2:*** *What are the systemic and long-term consequences of fully virtual teaching and learning on the well-being of educators and students in K-12 settings?*

In phase 1, educators and parents/guardians/caregivers (i.e., families) were invited to participate in focus groups which explored two key areas: wellbeing and pedagogy. Five educator and 2 family focus groups were facilitated in August 2021. Educators and parents shared their respective experiences and insights in relation to virtual teaching and learning and their students'/children's experiences. The following themes emerged: (1) comfort with information communication technologies and platforms; (2) pedagogy: teaching and learning; (3) relationships; (4) wellbeing; (5) privacy. In phase 2, educator and education worker, family, and student surveys were developed based on these themes. The surveys consisted of closed-ended and open-ended questions and were circulated online between November 2021 and March 2022 in both official languages. In total, 2247 educators, 847 families and 86 students (Grades 5-12) participated in the survey.

RESULTS

The findings indicate virtual learning carried many significant negative implications. Moreover, the findings indicate that the hybrid pedagogical model is fundamentally

flawed and not sustainable as it is impossible to provide equitable and quality education when attempting to engage two different audiences, face-to-face and virtually. Although relationships emerged as an independent theme, concerns around developing and maintaining positive relationships with others were inextricably integrated throughout participant responses.

Comfort with information communication technologies and platforms

The majority of participants indicated being comfortable with respect to using information communication technologies and platforms, lending confidence to the conclusion that it did not impact participant experiences in relation to virtual learning.

Pedagogy: Teaching and learning

Requirements and Resources. The findings indicated a lack of alignment between the government's/Ministry of Education's and school boards' expectations and requirements regarding virtual models of teaching and learning and the resources and supports made available to do so.

Responding to student needs

Educators, students, and families expressed concerns around student needs being met in a virtual environment. Supporting student wellbeing and meaningful academic engagement and success were central to these concerns. The important role of student-teacher and peer relationships were highlighted as critical factors across responses. The following challenges and needs were identified:

- Communicating needs for support and receiving support (e.g., IEPs; special needs; ELLs; engaging younger students).
- Providing essential one-on-one support for at-risk students (e.g., cutting; suicide attempts; unsafe home environments).
- Assessing student needs and responding appropriately when students are not visible (videos turned off; mics muted).

- Students not expressing their social, emotional, and mental health needs in a virtual setting (e.g., do not feel comfortable; ELLs are not able to communicate their concerns easily).
- Opportunities for student-teacher and peer interactions, socialization, and collaboration.
- Deterioration of students' social and emotional skills (e.g., emotion-regulation; conflict-resolution; empathy; increased aggression, bullying, and problems with peers).
- Decreased motivation, readiness to learn, attention and concentration, and active and interactive engagement.
- Opportunities for engaging in hands-on learning (e.g., labs).
- Meaningful and authentic assessment of student progress/achievement.
- Student access to resources required for learning (e.g., computers; microphones; stable internet connection) and student access to effective learning environments (e.g., quiet space; no interruptions).

Wellbeing

Educators and families reported that the virtual model of teaching and learning negatively impacted their families' wellbeing (e.g., increased stress, anxiety, depression, and fatigue; damaged family relationship/increased conflict in the home; demanding schedules).

Physical Wellbeing. Educators reported a decline in their physical wellbeing (e.g., decreased movement/activity, deteriorating eyesight, headaches/migraines) as well as that of their students (e.g., reduced physical movement; decreased access to food/healthy diet). The decline in students' physical wellbeing was further supported by student and family reports (e.g., sleep disturbances, increased fatigue, headaches, deteriorating eyesight, and increased aches and pains).

Social-Emotional Wellbeing and Mental Wellbeing. Many educators reported an increase in anxiety and depression, and indicated concerns around the availability of, or access to, the resources required to support their emotional and mental wellbeing.

Furthermore, a significant number of educators indicated seeking mental health support, professional services, or counselling to address the demands of virtual teaching. Families reported a negative impact on their children. These concerns included loneliness, increased sadness and depression, increased emotion-regulation difficulties (e.g., increased agitation and anger), and increased anxiety and stress. Similarly, many families indicated concerns around the availability of, or access to, the resources required to support their children's emotional and mental wellbeing. A significant proportion also indicated seeking mental health support, professional services, or counselling for their children and themselves.

Professional Wellbeing. Educators expressed concerns in relation to their sense of professional wellbeing. Specifically, their motivation to continue teaching, their sense of self-efficacy and their ability to do their work was negatively impacted in the context of virtual teaching.

Privacy

Over half of educators articulated concerns about preserving their own privacy as well that of students and families but the predominant worry among educators was related to students being able to share their feelings, thoughts, experiences and concerns safely and appropriately. Educators additionally expressed concerns around the lack of resources required for responding to privacy-related issues that unexpectedly arise in a virtual environment. A lower percentage of students and families expressed concerns about preserving their own privacy. Students were mostly worried about being recorded and the video being shared or feeling anxious on camera, as a result of being on camera. Families were worried about others seeing into their home and overhearing conversations.

In summary, the findings clearly indicate that the experiences of educators, students, and families in relation to virtual models of teaching and learning has been negative, with the hybrid model perceived as fundamentally flawed. In fact, none of the participants expressed a preference for virtual over in-person teaching and learning.

INTRODUCTION

The COVID-19 pandemic accentuated already growing concerns around wellbeing and pedagogy in the K-12 educational context in Ontario. As an orienting construct, wellbeing offers a complex and multifaceted framework for both understanding and supporting students to successfully engage in their learning and navigate through life. Although attaining and sustaining a state of wellbeing is an important objective on its own (Keyes, 2007; Pressman, Jenkins, & Moskowitz, 2019), it is also a required condition upon which academic achievement is built (Miller et al., 2013). It is imperative then to ensure that student wellbeing is at the centre of directives in education. Given that educator wellbeing is inextricably connected to student wellbeing, it is equally important to ensure that educator wellbeing is addressed as well.

There has certainly been an increasing interest in how wellbeing connects to positive outcomes in education. For instance, academic achievement has been associated with student health behaviours (Bradley & Greene, 2013). In its broader sense, the construct of wellbeing is comprised of physical, emotional, social, cognitive, and material elements. The Ontario Ministry of Education defines wellbeing as “a positive sense of self, spirit, and belonging that we feel when our cognitive, emotional, social and physical needs are being met. It is supported through equity and respect for diverse identities and strengths” (Ministry of Education, 2016, p.3). The policy language in Ontario adopts a multifaceted framework that reflects an emphasis on physical, emotional, psychological, and socio-cultural wellbeing. While the evaluation and assessment of student wellbeing has been prioritized, the current landscape in Ontario reflects a rise in mental health issues in school-age children and youth (Gandhi et al., 2016). It is not surprising that the stress and anxiety associated with virtual pedagogical models (Ahn, 2011; Oviatt et al., 2016; West et al., 2009) have contributed negatively to mental health and wellness – for educators, students and their families (Canadian Teachers’ Federation, 2020; Ontario Public School Boards’ Association, 2021).

Stress and Wellbeing: Teaching and Learning

Students

Under conditions of excessive stress, student wellbeing and academic achievement are negatively impacted. Excessive stress results in parts of the brain being placed in a state of high alert, which in turn impacts the ability to regulate emotions and impulses, attend, reflect, and engage in constructive relationships with others. Throughout the COVID-19 pandemic, students have experienced the continuous stress of contending with factors associated with virtual learning. For instance, to name a few, lack of access to necessary supports and required learning materials, as well as social isolation. Factors such as these breed conditions of excessive stress and moreover, restrict students' tolerance threshold for coping with stress and anxiety - as the brain has shifted into a state of high alert. It is evident that in this state, the brain does not have the capacity to support executive function skills that are essential for meaningful learning to transpire. As Cozolino (2012) states:

> *"the neuroanatomy and neurochemistry of learning and memory are interwoven with the primitive survival circuitry dedicated to arousal, stress, and fear. This is why thinking and feeling are so intertwined, why plasticity turns off during high levels of anxiety, and why stressed brains are resistant to new learning" (p. 73).*

Under stressful conditions, challenges related to memory will not be uncommon. The hippocampus (memory centre) is functioning differently under heightened stress and when compromised, new learning as well as short-term and long-term memory are adversely impacted (Bremner et al., 1993; Lupien et al., 1998; West, 1993). Research shows that when students feel that the expectations outweigh the available resources, the tolerance threshold will be challenged even more so, they perform more poorly in school—on a physiological level, their bodies go into a state of fight-or-flight, leading to

less oxygen flowing to the brain as well as the release of cortisol, all making it more difficult to form new memories (Carroll & Yeager, 2020)—an attribute required for learning. Effectively, students are likely functioning in a more dysregulated state and will struggle with emotion regulation, social relationships, and academic engagement and success.

Educators

Relationships with significant individuals are of great importance, given that psychologically people do not exist independent of their relationships (Winnicott, 1965). These key relationships are deeply connected to an individual's overall wellbeing. One of the most influential tools that educators have is the ability to regulate student stress and anxiety through classroom interactions and relationships. Educators play a pivotal role on a day-to-day basis as they co-regulate and support students in developing their own self-regulation capacities. But this is only possible to the extent that educators' wellbeing is being simultaneously addressed. Therefore, a focus on educator wellbeing is equally imperative.

Data collected from 17,352 educators across Canada in 2020, shows that "the mental health of teachers was 'severely endangered' by stressors such as: excessive workload, lack of clear direction and planning, increased screen time, and social isolation" (Canadian Teachers' Federation, 2020, p. 1). Numerous factors identified through the data are not exclusive to the COVID-19 pandemic but emanate from experiences tied to virtual pedagogical models. For educators to support the wellbeing of their students, their own wellbeing must be prioritized alongside that of their students. When experiencing excessive stress, educators' capacity to co-regulate students is compromised, seeing as the ability to read and direct cues of safety is negatively impacted in such conditions.

In other words, educators are impacted in the same way--parts of the brain shift into a state of high alert, which in turn may impact the ability to support their students as effectively. Moreover, when students are experiencing stress and anxiety, their ability to receive signals of safety is diminished as well. This can culminate in a stress cycle (Shanker, 2016) for educators and students. It is challenging, if not impossible, to navigate relationships effectively in a virtual setting. The experience of being face-to-face is unparalleled. As Tantam states "…synchronous movement increases altruistic concern between those whose movements are synchronized and cooperation between them" (2018, p. 20). This kind of development seems like an improbable possibility when connections and relationships are primarily virtual.

Relationships

It is widely acknowledged that students thrive and learn in the context of positive and supportive relationships. Social interactions have been described as a basic human need (Baumeister & Leary, 1995); in fact, feeling disconnected from others is correlated with severe and lifelong negative impacts on mental and physical health, even resulting in increased mortality (Hawkley & Cacioppo, 2010). The emotional and instrumental support provided in the framework of student-teacher relationships (Gilman & Huebner, 2003; Suldo, Shaffer, & Riley, 2008), and peer social support (Goswami, 2012; Newland, Lawler, Giger, Roh, & Carr, 2015; Oberle, Schonert-Reichl, & Zumbo, 2011) play an invaluable role in supporting student wellbeing and meaningful academic engagement and success. Schools and classrooms provide spaces and opportunities for connections and relationships with both important adults and peers, making a far-reaching impact on social and emotional wellbeing and mental health. Connection is identified as one of the pillars of wellbeing, supported by neuroscientific evidence (Davidson, 2022). Consequently, the effect of social isolation on the mental health and wellbeing of children and youth can have negative life-long consequences (Orben, Tomova, & Blakemore, 2020; SickKids, 2020), and this remains a characteristic of virtual pedagogical models. Feelings of safety, physically, emotionally, and psychologically, can best be nurtured through these important relationships in a face-to-

face context (Tantam, 2018). And, when students feel safe, they are open to learning in meaningful ways.

Virtual Pedagogical Models

Although the COVID-19 pandemic necessitated implementation of emergency virtual pedagogical models, the practice had negative implications for many educators, students and their families. In part, the shift was challenging, given that the models and strategies applied in the context of in-person learning do not translate effectively into virtual environments (Graham et al., 2019; Ko & Rossen, 2017). Relationships and interactions with educators and peers are fundamental for developing self-confidence, positive self-esteem, and enhancing students' ability to work collaboratively and productively with one another (Chin & Osborne, 2008; de Souza Fleith, 2000). In an online environment, students' ability to engage in learning, concentrate, learn, develop self-worth from learning, feel motivated, understand instructions, and obtain appropriate feedback are all significantly lowered (Friedman, 2020; Garbe et al., 2020; Walters et al., 2022; Yates et al., 2021). Moreover, these differences can be significantly greater for students with specific learning difficulties (Fellman et al., 20202; Walters et al., 2022). Student wellbeing is also negatively impacted. For instance, research has demonstrated a negative correlation between elements of online learning, such as concentration and ability to learn, and students' mental wellbeing (Walters et al., 2022). This is of concern given that student engagement and concentration are essential components of successful learning (Appleton, Christenson, & Furlong, 2008).

Current Study

The implementation of virtual pedagogical models provided an opportunity to evaluate their impact, with a focus on educators, students and families. To begin, we must first take the time to identify and understand the critical underlying stressors and challenges that educators, students and their families contend with in the context of virtual teaching and learning so that these issues can be effectively addressed (e.g., providing the

required and essential resources and supports). By elevating the voices from these respective communities, we can develop an authentic understanding of the circumstances. Due to the COVID-19 pandemic, there is increasing research on virtual learning, with most studies exploring the perspectives of educators and families. However, adopting a multi-informant paradigm that captures the voices of educators, students and families would strengthen the existing body of research. One thing is for certain, consistent connection, interdependence, collaboration, cooperation and a sense of community are inextricable characteristics of humanity. As such, education must be considered through a social and interactive lens. It is not surprising that without connection and with increased isolation, we observe a rise in mental health issues. In other words, this "wellbeing slide" must be addressed to effectively support students, educators, and families. This is an important endeavour, given the significant and far-reaching impact virtual pedagogical models can have on student wellbeing and academic success, as well as the wellbeing and success of educators and families. As such the following research questions were explored:

Research Question 1:

What are the systemic and long-term implications of virtual teaching and learning for educators and students in K-12 settings?

Research Question 2:

What are the systemic and long-term consequences of fully online virtual teaching and learning on the wellbeing of educators and students in K-12 settings?

METHODOLOGY

A convergent mixed-methods design was adopted to conduct the evaluation. In phase 1, educators and families were invited to participate in focus groups which explored two key areas: wellbeing and pedagogy. The invitation to partake in the focus groups was distributed through the networks of the Ontario Teachers' Federation and its affiliates - the Association des enseignantes et des enseignants franco-ontariens

(AEFO), the Elementary Teachers' Federation of Ontario (ETFO), the Ontario English Catholic Teachers' Association (OECTA), the Ontario Secondary School Teachers' Federation (OSSTF) - other education stakeholder groups' networks, and social media platforms (Twitter and Facebook). Five educators focus groups (*N* = 45) were facilitated in August 2021. During the same period, two parent focus groups were facilitated (*N* = 10). Educators and parents shared their respective experiences and insights in relation to virtual teaching and learning and their students'/children's experiences. The content of the focus groups was transcribed and subsequently analyzed to identify emerging themes. The themes that emerged were as follows: (1) comfort with information communication technologies and platforms; (2) pedagogy: teaching and learning; (3) relationships; (4) wellbeing; (5) privacy.

In phase 2, educator and education worker (i.e., educator), family, and student surveys were developed based on the themes that emerged from phase 1. The educator survey consisted of 46 closed-ended questions (Likert scale), with the option to share open-ended responses. The questions were focused on the current and future implications of virtual teaching and learning as it intersects with pedagogy and wellbeing in the K-12 educational context of Ontario's publicly funded education system. The family survey was comprised of 31 closed-ended questions (Likert scale), with the option to share open-ended responses. To ensure that the student survey reflected developmentally suitable questions, two versions of the student survey were developed. One version was developed for students in Grades 5 to 8 (23 closed-ended questions) and the other version was developed for students in Grades 9 to12 (25 closed-ended questions). Both versions offered the option to share open-ended responses as well. An online survey platform (SurveyMonkey) enabled wide and convenient survey distribution and data collection.

A province-wide invitation to participate in the survey was disseminated to educators in both official languages through the networks of the Ontario Teachers' Federation and its affiliates - AEFO, ETFO, OECTA, OSSTF - and other education stakeholder groups' networks in November 2021. A total of 2,337 educators consented to participate and shared their experiences and insights via quantitative and qualitative responses

(English = 1986; French = 351). The responses were collected anonymously. Subsequent to cleaning the data (e.g., accounting for missing data), 2,223 participants remained in the database (English = 1890; French = 333).

An invitation to participate in the family survey was shared through OTF's networks (members could share with families and/or complete from their own perspectives as parents/families) and Tweeter feed, as well as through the researchers' local parent communities in both official languages. A total of 1,247 families consented to partake in the survey and share their experiences and insights via quantitative and qualitative responses (English = 995; French = 252). Subsequent to cleaning the data (e.g., accounting for missing data; child attending independent school), 847 participants remained in the database (English = 691; French = 156). An invitation to participate in the student surveys was included in the invitation letter shared with families in order to ensure that families consented to their children's participation in the survey. In total, 81 students in Grades 5 to 8 and 99 students in Grades 9 to 12 participated in the survey. Subsequent to cleaning the data, 45 students in Grades 5 to 8 (English = 31; French = 14) and 41 students in Grades 9 to 12 (English = 25; French = 16) remained in the database.

With respect to the qualitative data, 10% of the open-ended responses shared by educators and families were randomly selected for each question and included in the thematic analysis. Given the low student sample size, all student open-ended responses were included in the thematic analysis. The qualitative data was included to yield a more in-depth understanding of participants' experiences and insights.

Participants

Demographic information was collected from educators, families, and students to better understand the distribution of the collected data and to ensure representativeness of the findings.

Educators

Of the 2,223 educators (female = 77.1%; male = 20.3%; non-binary = 0.1%; "prefer not to answer" = 2.5%) surveyed, 93% identified their role as "Teacher/Educator" (see table 1). Concerning employment status, 87.6% of respondents reported their employment status as "full-time" with 8.3% reporting "casual/occasional", 3.1% reporting "part-time", and 1% reporting "other". Figure 1 reflects years of work experience, as reported by educators.

Table 1: Position/Role

Teacher/Educator	93%
Education Resource/Support Worker	1.9%
Guidance Counsellor	1.2%
Consultant/Coordinator	1.0%
Early Childhood Educator (ECE/DECE)	0.9%
Special Assignment Teacher	0.8%
Professional Student Support Worker	0.4%
Administrative/Clerical	0.5%
Other	0.3%

Figure 1: Educator Years of Work Experience

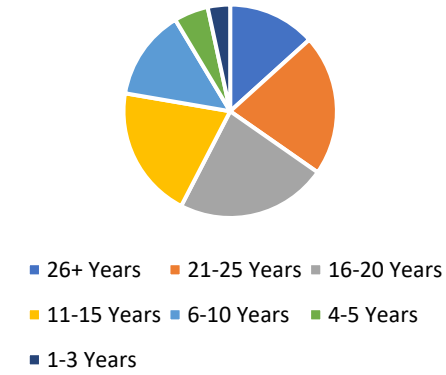


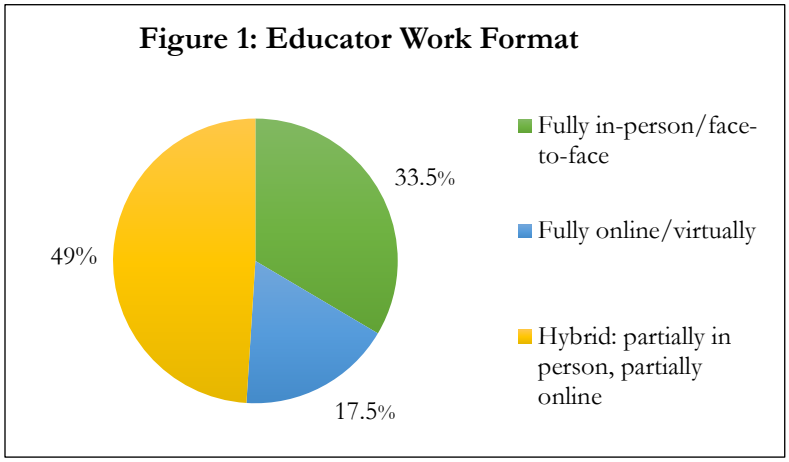
Table 2 illustrates the distribution of division(s) based on responses from the 2,219 educators.

Table 2: Division

Secondary	49.6%
Intermediate	21%
Junior	24.9%
Primary	30%
Kindergarten	16.4%
Board Level/Assignment	1.1%

Special Education	0.5%
French	0.2%

**Please note that the percentages do not add up to 100% as many participants selected more than one division.*



With respect to the work format most often used to support students, 49% of educators reported "Hybrid: partially in person, partially online", 17.5% reported "fully online/virtually", and 33.5% reported "fully in-person/face-to-face" (see figure 1). It should be noted that the "fully in-person/face-to-face" category entailed shifting between in-person and virtual learning. All participants were asked to reflect on their experiences with virtual learning.

Families

Of the 847 participants (female = 76.61%; male = 18.85%; non-binary = 0.24%; "prefer not to answer" 4.3%), 86.06% reported their employment status as "full-time", 6.2% reported "part-time", 2.86% reported "homemaker", 1.19% reported on "disability leave", 0.95% on "parental leave", 0.36% reported "unemployed", and the remaining 2.38% reported "other" (e.g., student; on medical leave; retired). A large percentage of respondents (62.4%) reported a household income above 100K, with 43.6% reporting "more than 120K" and 18.8% reporting "101-120K" (see table 3). Only 6.59% of participants reported a household income ranging from "under 20K" to "70-79K", however, it should be noted that 18.8% of participants did not respond to the question.

Concerning participant level of education, the majority of respondents, 66.15% specifically, reported having obtained a "University degree", with 23.2% reporting a graduate degree (see table 4). The distribution of participants identifying as coming from a racialized or equity-seeking group indicated that 11.06% identified as such, with

79.08% not identifying as coming from a racialized or equity-seeking group, and 9.86% preferred not to answer the question.

Table 3: Household Income	**Percentage**
Under 20K	0.35%
20-29K	0.24%
30-39K	0.24%
40-49K	1.06%
50-59K	1.41%
60-69K	1.06%
70-79K	2.23%
80-100 K	12.21%
101-120K	18.8%
More thank 120K	43.6%
Preferred not to answer	18.8%

Table 4: Level of Education	**Percentage**
Less than high-school diploma	0.12%
High-school diploma	1.32%
College certificate or diploma	9.21%
University degree	66.15%
Master’s degree	21.05%
Doctorate degree	2.15%

With respect to the number of school-age children, 37.17% of families reported having one school-age child, 47.39% reported two school-age children, 12.71% reported three school-age children, and 2.73% reported four or more school-age children. The distribution in student Grade level was similar across participants (table 5).

Table 5: Grade Level Distribution	**Percentage**
JK-SK	20.19%
Grades 1-2	26.45%
Grades 3-4	23.61%
Grades 5-6	28.23%
Grades 7-8	23.3%
Grades 9-10	23.73%
Grades 11-12	23.97%

**Please note that the percentages do not add up to 100% as some participants reported having more than one school-age child.*

With respect to school learning format, 39.79% of families reported their child/children engaged "fully online/virtually", 49.12% reported their child/children engaged in "Hybrid: partially in person, partially online" learning, and the remainder reported "not applicable" (e.g., homeschooling). It should be noted that the "not applicable" group was removed from the analyses. When families were asked whether they supported their child/children during the shift to online/virtual learning, 81.07% stated "yes", 14.17% stated "no", and 4.76% stated "Not applicable".

With respect to having a child or children with special needs/learning challenges or identified exceptionalities, 72.59% of respondents reported "no" and 27.41% indicated "yes". Examples included ADHD, Autism, Cerebral Palsy, Deafness, Developmental Delay, Down Syndrome, giftedness, and Learning or Intellectual Disability. Given that the sample size for students with special needs/learning challenges or identified

exceptionalities was low, it was not sound to conduct additional independent exploratory analyses.

Students

Of the 86 participants, 45 were in Grades 5 to 8 (female = 61%; male = 34%; “preferred not to answer” = 5%) and 41 were in Grades 9 to 12 (female = 52.27%; male = 38.64%; “preferred not to answer” = 9.09%). The distribution of participants’ age and Grade level are presented in table 6 and 7 respectively. The majority of students (75.56%) reported “English” as the language most often spoken at home, 26.67% reported “French” as the language most often spoken at home, and 6.67% reported other languages (e.g., Arabic, Ugandan).

Table 6: Student Age Distribution

Grade	Age	Frequency	Percentage
Grades 5-8			
	8 years old	1	2.27%
	10 years old	11	25%
	11 years old	11	25%
	12 years old	9	20.46%
	13 years old	7	15.91%
	14 years old+	5	11.36%
	Missing	1	
Grades 9-12			
	14 years old	6	15.38%
	15 years old	12	30.77%
	16 years old	16	41.03%
	17 years old	4	10.26%
	18 years old+	1	2.56%
	Missing	2	

Table 7: Student Grade Level Distribution

Grade Level	Frequency	Percentage
Grades 5-8		
Grade 5	13	28.89%
Grade 6	12	26.67%
Grade 7	7	15.56%
Grade 8	12	26.67%
Other	1	2.22%
Grades 9-12		
Grade 9	5	12.82%
Grade 10	15	38.46%
Grade 11	15	38.46%
Grade 12	4	10.26%
Missing	2	

RESULTS

Participant responses are reflected according to the following themes: (1) comfort with information communication technologies and platforms; (2) pedagogy: teaching and learning; (3) relationships; (4) wellbeing; (5) privacy.

COMFORT WITH INFORMATION COMMUNICATION TECHNOLOGIES

Most educators reported feeling comfortable with using information communication technologies and platforms: 58.7% reported feeling “very comfortable” or “comfortable” using information communication technologies and platforms, 31.1% reported feeling “somewhat uncomfortable” and 10.2% reported feeling “very uncomfortable.” As far as receiving support from employers, 69.9% reported receiving “no” (13.8%) or “limited/inadequate” (56.1%) support from employers with respect to the professional use of information communication technologies and platforms, 26.3% reported receiving “adequate” support and 3.9% reported receiving “extensive” support.

The majority of Grade 9 to 12 students (68.29%) reported feeling “very comfortable” (29.27%) or “comfortable” (39.02%) with using information communication technologies and platforms, with 17.07% reporting being “somewhat comfortable” and 14.63% reporting “somewhat uncomfortable”. Similarly, 69.42% of families reported feeling “very comfortable” or “comfortable” with using information communication technologies and platforms, 19.84% reported feeling “somewhat uncomfortable” and 10.51% reported feeling “very uncomfortable”.

PEDAGOGY: TEACHING AND LEARNING

PEDAGOGY: REQUIREMENTS AND RESOURCES

Educators expressed concern about the alignment between the government’s/Ministry of Education’s and school boards’ expectations and requirements regarding virtual models of teaching and the resources and supports made available to do so. The majority of participants (84.4%) reported “no alignment” (37.2%) or “very little alignment”

(47.2%) between the government's/Ministry of Education's expectations and requirements regarding virtual models of teaching and the resources/supports made available to do so. The remaining participants reported "some alignment" (14.5%) or a "strong alignment" (1.1%).

The main themes that emerged from the qualitative survey data are as follows:

- A need for provision of required training to support virtual models of teaching and learning.
- A need for required technological resources to support virtual models of teaching and learning.
- Inadequacy of existing resources required to support virtual models of teaching and learning.
- The government/Ministry of Education's expectations/requirements do not reflect the realities of the hybrid teaching and learning model.
- The government/Ministry of Education does not acknowledge the fundamental difference between virtual and in-person teaching and learning.

Examples of participant comments are presented below. All forthcoming comments are representative of themes that emerged from the qualitative survey data.

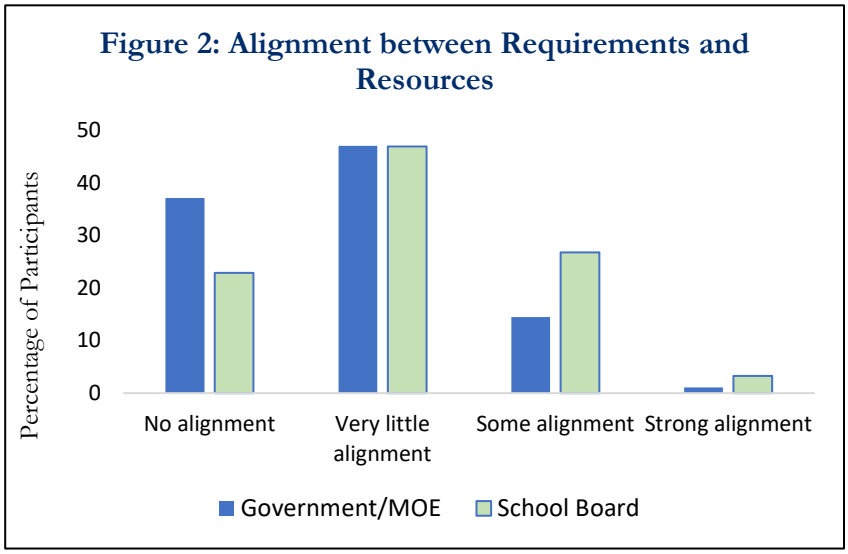
"The government told parents multiple times that teachers would be trained but we got no direction other than to go out and teach." - *Intermediate Teacher*

"Many resources do not have an online platform that is ready to use. Many of us had to develop our own and spend countless hours and days to make this possible to teach effectively to students." - *Junior Teacher*

"It is impossible to provide equal and equitable education when your focus is split between two platforms [hybrid]. Neither group is getting what they need but instead get the watered-down version of the curriculum and talents of the teacher…"
- Secondary Teacher

"There is an expectation that students can move seamlessly between online and face-to-face learning, and that teachers can just treat the online students as they do their face-to-face students. There is no acknowledgement of how different the two formats are."
- Intermediate/Secondary Teacher

While the majority of participants expressed "no" to "very little" alignment between their school board's expectations and requirements in relation to virtual models of teaching and the resources and supports made available to do so, some expressed that their school boards did what they could to support virtual models of teaching (see figure 2): 69.9% of participants reported "no alignment" (22.9%) or "very little alignment" (47%) between their school board's expectations/requirements regarding virtual models of teaching and the resources and supports made available to do so, with 26.8% reporting "some alignment" and 3.3% reporting a "strong alignment."



The main themes that emerged from the qualitative survey data are presented below. Several themes overlapped with those which emerged based on the analysis of the government/Ministry of education expectations/requirements.

- A need for provision of training and/or provision of adequate training required to support virtual models of teaching and learning.
- A need for provision of adequate technological resources required to support virtual models of teaching and learning.
- A need for provision of adequate resources required to support virtual models of teaching and learning.
- Unrealistic expectations pertaining to time required to plan and organize virtual models of teaching and learning.
- A need for clear and adequate communication from school boards.

"There was no training for math teachers on how to make the best of online learning resources in a math virtual and/or hybrid classroom. They only provided videos with minimal information that was not enough for me to help my students learn."- Secondary Teacher

".... with such limited training and tools staff are burning out and students are frustrated and confused about the direction of their learning." - Secondary Teacher

"The board has not provided any meaningful resources or training to support the virtual learning and/or educator collaborative virtual platforms. The biggest of all, would be release time given/needed to do my own professional development and planning for virtual learning." - Kindergarten/Primary Teacher

"The school board regularly sends out ideas and initiatives that you could incorporate. The challenge is finding the time to go through or try them."- Junior/Intermediate Teacher

"I feel the board understands SLIGHTLY better than the ministry but there have been very limited supports and the ones that are available are unorganized and too complicated. For example, going to a site that has hundreds of links to scroll through."- Secondary Teacher

RESPONDING TO STUDENT NEEDS

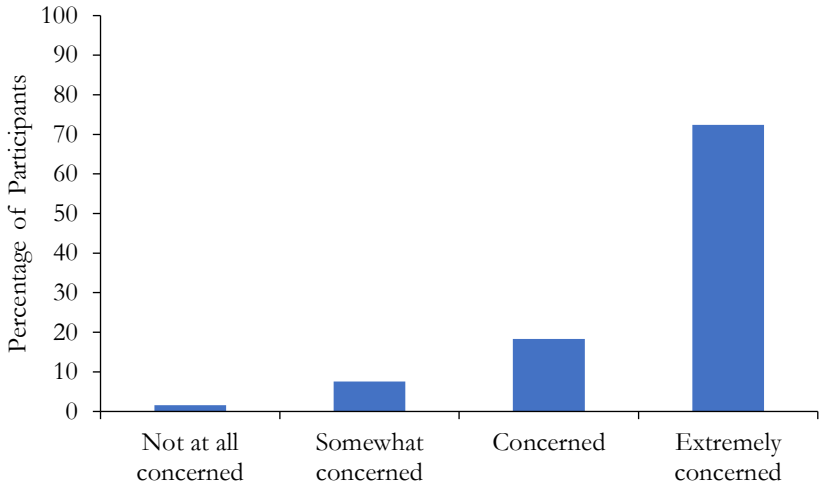
71% of educators reported "no alignment" (30.7%) or "very little alignment" (40.3%) between their philosophy/approach to education and virtual models of teaching and learning, with 24.6% reporting "some alignment" and 4.5% reporting a "strong alignment."

The overwhelming majority of educators expressed concern about meeting student needs in a virtual context. The concerns relate to student wellbeing and academic success. It should be noted that the emerging themes from the qualitative survey data

were aligned with those that surfaced during the focus group discussions.

90.8% of educators reported being "extremely concerned" (72.4%) or "concerned" (18.4%) about meeting the needs of students in a virtual context, with 7.6% reporting being "somewhat concerned" and 1.6% "not at all concerned" (see figure 3).

Figure 3: Meeting Students' Needs



With respect to meeting students' needs, the main themes that emerged from the qualitative educator data are predominantly connected to developing and building student-teacher relationships which drive learning and support student wellbeing. The following themes emerged highlighting areas of concern:

- Supporting students' mental and emotional wellbeing
- Supporting development of students' social and emotional skills
- Supporting development of students' self-regulation skills
- Engaging younger students (not developmentally suitable)
- Meeting needs of students with special needs and IEPs
- Meeting needs of ELLs
- Providing one-on-one support to at-risk students.

Themes reflecting important practical concerns emerged as well:

- Lack of student access to resources required for learning (e.g., computers; microphones; stable internet connection)
- Lack of student access to effective learning environments (e.g., quiet space; no interruptions).
- Inability to facilitate and engage in hands-on learning (e.g., labs).

"Mental health needs. Meeting students in my guidance counsellor role is extremely difficult. Virtually, students won't ask the same questions." - Guidance Counsellor

"Our virtual students from last year are struggling to come back to real school this year - after 1 year of being at home. They are struggling to make friends and connections. They are struggling because now they are accountable for their work. They are struggling. How can virtual learning be good for a young person? They get a mark and credit - yes and often a high mark with that credit... but do many of them know that material and more importantly - are they able to function in society and with other people after being at home, isolated?" - Secondary Teacher

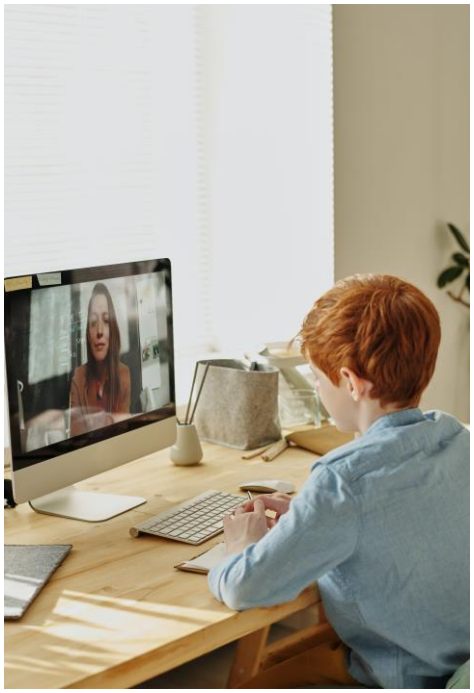
"Students learning English have difficulty navigating online instructions. New readers do too. Most 6-year-olds needed an adult beside them."- Primary Teacher

"We have no control over what students are doing in their homes during online/virtual learning. How are we supposed to meet their needs when they are not under our direct supervision?" - Kindergarten Teacher

"When dealing with hybrid classes, it is impossible to align activities without ignoring one 'audience' or the other. Even with a well-orchestrated explain to 'in-person' (okay you all do your work - unsupported) now I will address the other 'audience' - who have been waiting ... and it is an endless loop. This leaves the teacher exhausted and prone to mistakes. Students with ASD: their main challenge is social interaction/social skills. Add to this the complexity of having to use an electronic device, add to this their challenge of not being distracted by the other 'zero stressful' activities they could be doing with this same electronic device. Challenging is a very understated description!" - Secondary Teacher

The majority of families (80%) reported being "extremely concerned" (57%) or "concerned" (23%) about the learning needs of their child/children being met in a virtual format, while 15% reported being "somewhat concerned" and 5% reported "not at all concerned". When families were asked about student learning needs that may be challenging to address in a virtual environment the following themes emerged:

- Difficulty communicating/asking for support and receiving support
- Decreased attention
- Decreased motivation
- Social and emotional development
- Connection (relationships)



- Mental health concerns
- Learning to collaborate (group work/social skills)
- Hands-on learning
- Supporting children with special needs

"...student may not initiate that they are struggling and may stop paying attention even though they have logged onto meet." - Parent

"Attention span is very short, JK/SK learners need to move and need human connection." - Parent

"My kids are pretty strong students, but even so, online learning has caused only tears and frustration." – Parent

When asked whether they thought that teachers are able to help them with their schoolwork and questions equally well when they are learning virtually as compared to in-person learning in a physical classroom, 42.5% of students in Grades 5 to 8 reported "not at all", 47.5% reported "sometimes", 2.5% reported "always", and 7.5% said "I'm not sure". Furthermore, when asked how the shift to virtual learning impacted their learning, 65% reported that "it made learning harder for me", 20% reported "there was no change for me", 5% reported "it made learning easier for me" and 10% responded with "I'm not sure". The majority of students in Grades 9 to 12 (65.63%) reported being "extremely concerned" (34.37%) or "concerned" (31.25%) about their learning needs being met in a virtual setting, 21.88% reported being "somewhat concerned" and 12.5% reported "not at all concerned". When invited to share examples of how the shift to virtual learning impacted students, the following themes emerged:

- Decreased motivation
- Difficulty learning (understanding information; learning challenges; learning styles)
- Loss of social support/socialization (doing group work; social interactions)
- Difficulty communicating/asking for and/or receiving support
- Decreased engagement and attention
- Physical health (e.g., sore eyes; headaches)
- Hands-on learning

"I didn't get to see my friends. It was hard to ask for help. It was hard for me to focus when I could play games rather than doing work. Mom and dad were working could not help me because they were working. I learn better at school!"- Grade 7 student

"I had difficulty understanding things without the teacher with me." - Grade 5 student

"It was lonely" - Grade 7 student

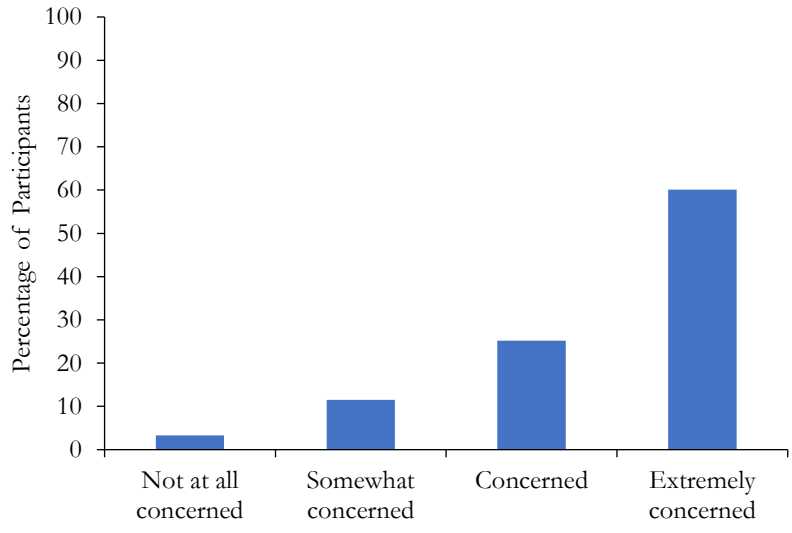
"Teachers weren't aware that I had an IEP and it was hard to help me when I was struggling. My Grade 10 math class was fully online during the shutdown in April 2021 and it was terrible." - Grade 11 student

"Teachers not being able to give support the same way that they could in class. It was hard to focus and stay attentive." - Grade 11 student

STUDENTS' SOCIAL-EMOTIONAL NEEDS

The vast majority of educators expressed concerns about being able to address students' social and emotional needs.

Figure 4: Meeting the Social-Emotional Needs of Students



85.3% of educators reported being "extremely concerned" (60.1%) or "concerned" (25.2%) about being able to respond to students' social and emotional needs, within the professional boundaries of their role, while 11.6% reported being "somewhat concerned" and 3.3% reported "not at all concerned" (see figure 4).

"How exactly do you provide co-regulation and emotional support through a screen? How do you know/assess a student's emotional situation when you can only see a student's initials on the screen and they are communicating with you exclusively through chat?"
- Secondary Teacher

"Students benefit from in person one-on-one support academically as well as socially. Some things teachers can spot in person (especially CAS case specific signs), they cannot spot virtually, especially when the students never log on." - Primary Teacher

"Often times a student would be crying and I couldn't adequately help because they were trying to hide it from parents in the background..." - Primary/Junior Teacher

"They [students] were left to handle their loneliness, fears, fights with parents, breakups and other adolescent ups and downs on their own. In person, students have many more opportunities to offer small indications of distress and many more points of contact with people throughout the day. This allows them to be seen and gives them multiple chances to share their concerns. That couldn't happen online."
- Secondary Teacher

"I had a student who admitted to wanting to kill himself. I had to give my class a task to busy them and delicately remove this student to a chat space all the while trying to use my cellphone to contact his mother. It was tricky to navigate. There I was trying to keep him talking without hearing me type an email to admin and/or notice the mute/unmute of my mic to navigate a call to his mother. I was traumatized because I was so critically removed and desperately needed to maintain connection that could be halted by him at any moment."- Secondary Teacher

"…I have students cutting, trying to commit suicide, socially reclusive, failing, living in unsupported families, with dangerous home lives. Online bullying was on a rise in my opinion." - Secondary Teacher

Participants shared their experiences with respect to social and emotional needs that are challenging to respond to in a virtual context. The themes that emerged from the qualitative survey data are presented below:

- Lack of student visibility (videos turned off; mics muted)
- Students do not express their social and emotional needs in a virtual setting (e.g., do not feel comfortable; ELL are not able to communicate their concerns easily).
- Inability to co-regulate and support students' emotional needs (e.g., hybrid learning; hiding emotions from family present in the home).
- Student engaging in self-harm behaviours (e.g., cutting; suicide attempts).
- Students continuously exposed to unsafe home environments.

Similarly, 76.57% of families reported being "extremely concerned" (53%) or "concerned" (23.57%) regarding teachers' ability to respond to their child/children's social and emotional needs virtually, 9.72% reported being "somewhat concerned" and 3.3% reported "not at all concerned". When asked to share examples of social and emotional needs that may be challenging to respond to in a virtual setting, the following themes emerged:

- Feeling connected/a sense of belonging
- Friendships/socialization
- Development of social skills
- Ability to access support/to feel supported
- To feel engaged/motivated/willing to participate
- Mental health concerns (stress, anxiety, depression, loneliness)
- Receive individualized attention/support

"Our children's teachers did an incredible job given the circumstances. However, the quality of teaching and the student-teacher, student-student relationships, connections and sense of belonging are not met in a long-term online situation." - Parent

"I am answering this question with another question: How can teachers possibly gauge their students' social and emotional needs over a computer monitor??" - Parent

"Students who are in crisis, who are traumatized or who are just struggling require strong relationships which are far more easily and effectively created in a shared space and environment." – Parent

"All of my kids really struggled with regular kid interactions when they got back to class because they were taught to mute themselves until called upon and instantly started thinking about school as something you watched and were not an active participant in. Now they wait to be told what the answer is, they wait to be called upon to contribute and often are having trouble dealing with issues with peers because they haven't had the opportunities for conflict while virtual learning occurred." – Parent

"One day, I came in the room to find my child on the floor, under a blanket sobbing in response to a discussion about residential schools. The teacher had no idea how it was affecting her because she [my child] turned her camera off. In person, the teacher would have responded to this reaction and adjusted the content accordingly in the moment." – Parent

"There was no socio-emotional support. When my child didn't understand, he would either hide his face to cry or he would leave the camera space to prevent people from seeing him cry." - Parent

"I never reached out because there was no opportunity to." – Grade 7 student

"Everyone is there and can hear you so you would likely be more nervous about asking the question than you are about the problem" – Grade 8 student

"Self-confidence has lowered and making friends has been impossible online."– Grade 10 student

"Online learning is awful there is no support for anything, my Mom did everything"– Grade 6 student

When students in Grades 5 to 8 were asked whether they think that they are also learning about how to deal with their emotions when they are learning virtually, 57.9% reported "not at all", 21.05% reported "a little bit", 2.63% reported "a lot" and 18.42% reported "I am not sure". Furthermore, when asked whether they can talk to their teachers and get help if they are feeling badly about something, 67.5% reported "no", 10% reported "yes", and 22.5% reported "I am not sure". The majority of Grade 9 to 12 students (82.76%) reported being "extremely concerned" (55.17%) or "concerned" (27.59%) about the impact of virtual learning on how their social and emotional needs are met (i.e., making friends, building self-esteem or self-confidence), 6.9% reported being "somewhat concerned" and 10.35% reported "not at all concerned".

When asked to share their experiences around their social and emotional needs being met in a virtual setting, the following themes emerged from student responses:

- Difficulty with friendships
- Loss of social skills and social interactions
- Ability to access support/to feel supported
- Difficulty communicating need for support
- Increased mental health challenges (anxious, stressed, lonely).

STUDENTS' SOCIAL-EMOTIONAL SKILLS

"Students are having difficulty regulating their emotions. It took more time for students to establish relationships with each other. They have a harder time determining what is appropriate play. Many play more aggressively and seek attention through hitting." - Primary Teacher

"Seeing many more conflicts at recess and limited problem-solving skills in many students." - Primary Teacher

"I have noticed a huge change in students this year. They are harsher with each other, have fewer filters and less academic stamina." - Intermediate Teacher

"Now that we're back in-person, I can really see the decline. Some students have forgotten how to interact in groups. They curse more freely and self-regulate less. This leads to many minor spats, angry words, and uncomfortable encounters as kids relearn that they cannot centre themselves at every moment." - Secondary Teacher

"Students who are back in school are demonstrating behaviors 1 to 2 years behind where they normally would be." - Special Education Teacher

"Students' levels of anxiety have skyrocketed. They are more shy, nervous, and anti-social. They are not able to problem-solve as well or even communicate in person. The classroom, in person, is SO much quieter than it used to be because students are no longer speaking to one another. They have forgotten how to work collaboratively in groups. They are too afraid to speak out because they have been so isolated for too long." - Secondary Teacher

The following themes emerged from the educator qualitative survey data:

- Decline in socialization skills (e.g., interactions with their peers and teachers)
- Decline in emotion-regulation skills
- Increase in aggression and bullying
- Decline in collaboration skills
- Decline in problem-solving skills
- Decline in empathy

Although the rating across most categories varied somewhat for families, a significant proportion reported that their child's/children's social and emotional skills deteriorated. The qualitative survey data collected from families yielded the following themes:

- Decline in socialization skills
- Decline in problem-solving
- Decline in conflict-resolution skills
- Decline in emotion-regulation skills.

78% of families reported that their child/children "significantly declined" (32.8%) or "somewhat declined" (45.2%) in development of their social-emotional skills (e.g., problem-solving, conflict resolution), while 17.51% reported "no change," 4.49% reported that that their child/children "somewhat improved" or "significantly improved".

"They're not interacting with peers as much as in-person learning (i.e. recess), so they're not practising ways to effectively resolve conflict or deal with disagreements." - Parent

"My girls became less social, far less happy, less engaged in school, completely withdrew from family, became much more willful (due to feeling powerless with the school situation), more rebellious, and suffered significant mental health harm."- Parent

"My daughter online needed to do remote learning for the first 2 weeks in January. But those two weeks were devastating. She could not focus, she had constant meltdowns, and appeared in a 'trance/zombie' like state by the end of the day - her eyes were so blank. It was a scary experience to witness as a parent of a special-needs child. She has been thriving since school has returned to in-person last month." - Parent

When students in Grades 5 to 8 were asked whether learning online made them feel like they were also learning to work well with other students (e.g., in pairs or in small groups, solving problems that might come up), 67.5% reported "not at all", 15% reported "a little bit", 7.5% reported "a lot", and 10% reported "I am not sure". Similarly, the majority of students in Grades 9 to 12 (81.25%) reported that their ability to work effectively with peers in pairs or small groups (e.g., problem-solving, resolving conflict) "significantly declined" (46.88%) or "somewhat declined" (34.38%) with the shift to online learning, while 15.63% reported "no change", and

3.13% reported “somewhat improved”. No students reported that their ability to work effectively with peers “significantly improved”. The following themes emerged from the student qualitative survey data:

- Decline in socialization skills
- Decline in collaboration skills
- Loss of community/loneliness

“No one talks in break out rooms. Group work is boring online, because you can't see anyone's faces and they don't talk.”- Grade 5 student

“No one wants to participate online and no one works on their school work because they do other things like watch tv. People don't even keep their camera on during class so when we did group work I wouldn't even know who my peers were. There was no sense of community or belonging. So when we did things in a group everything felt awkward.”- Grade 10 student

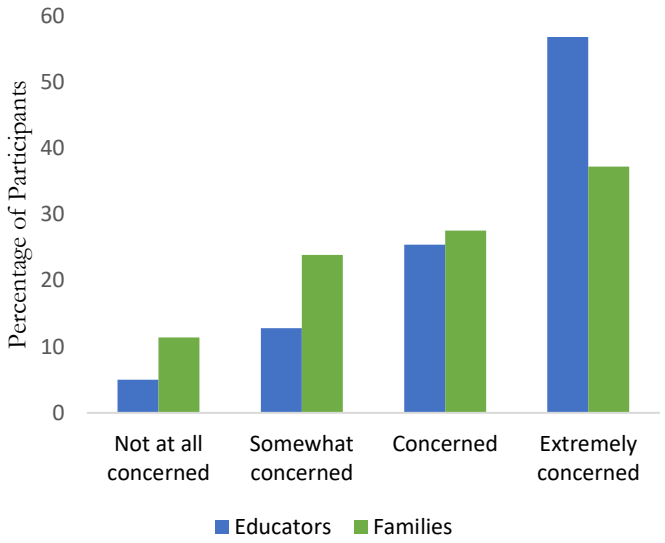
STUDENT LEARNING

The majority of educators, families, and students expressed concerns pertaining to factors that play a critical role in student learning.

Assessing and Reporting Student Progress

82.2% of educators reported being “extremely concerned” (56.8%) or “concerned” (25.4%) about assessment of student progress (e.g., providing constructive feedback) in a virtual setting, while 12.8% reported being “somewhat concerned” and 5% reported “not at all concerned” (see figure 6).

Figure 6: Assessing Progress



When asked whether they prefer receiving feedback face-to-face in a classroom or online, 70% of students in Grades 5 to 8 reported that they prefer receiving feedback

face-to-face, 10% reported a preference for receiving feedback online and 20% reported "I am not sure". Students shared that face-to-face feedback provided more opportunities for authentic interactions. Moreover, when asked whether they thought that virtual learning made them feel like they were doing a good job learning about course material and increasing their knowledge and skills, 57.5% reported "not at all", 35% reported "a little bit", 2.5% reported "a lot" and 5% reported "I am not sure". The most prominent concerns shared were around difficulties with understanding the material and feeling supported in a virtual environment.

When asked whether they had any concerns about the assessment of their progress (e.g., Grades, getting feedback, help or support) in the context of online learning, 59.38% of students in Grades 9 to 12 reported being "extremely concerned" (31.13%) or "concerned" (28.13%), 28.13% reported being "somewhat concerned" and 12.5% reported "not at all concerned". The most prominent concerns voiced by students were focused on a lack of opportunity to ask questions/receive feedback, and that learning cannot be fairly assessed when conducted virtually (e.g., cheating; depth of knowledge).

"Couldn't get feedback right away from the teacher so I never knew if I was doing it right or not." – Grade 7 student

"Harder to reflect that you've learned something through emails and worksheets instead of handing in notes or teachers can't see how much you have understood."– Grade 10 student

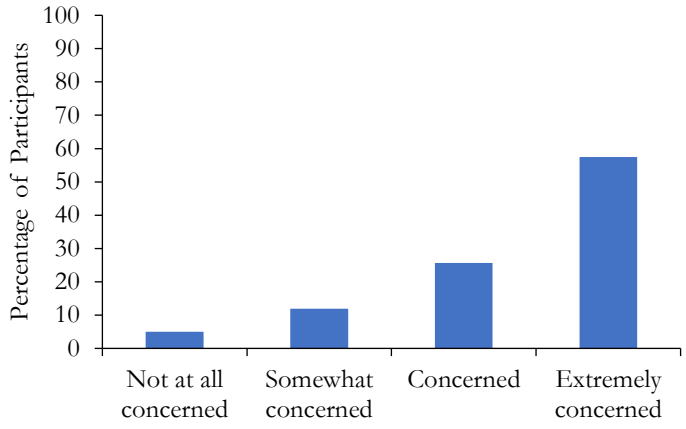
Although to a slightly lesser degree, the majority of families (64.75%) similarly reported being "extremely concerned" (37.22 %) or "concerned" (27.53%) about assessment of their child/children's progress, 23.88% reported being "somewhat concerned" and 11.38% reported "not at all concerned".

"Hard to give feedback to a child when all the other children are present and uninterested."

- Parent

83.2% of educators reported being "extremely concerned" (57.5%) or "concerned" (25.7%) in regard to reporting on student achievement in the context of virtual teaching and learning, 11.8% reported being "somewhat concerned" and 5% reported "not at all concerned" (see figure 7).

Figure 7: Student Achievement



Motivation, Readiness to Learn, and Active/Interactive Engagement

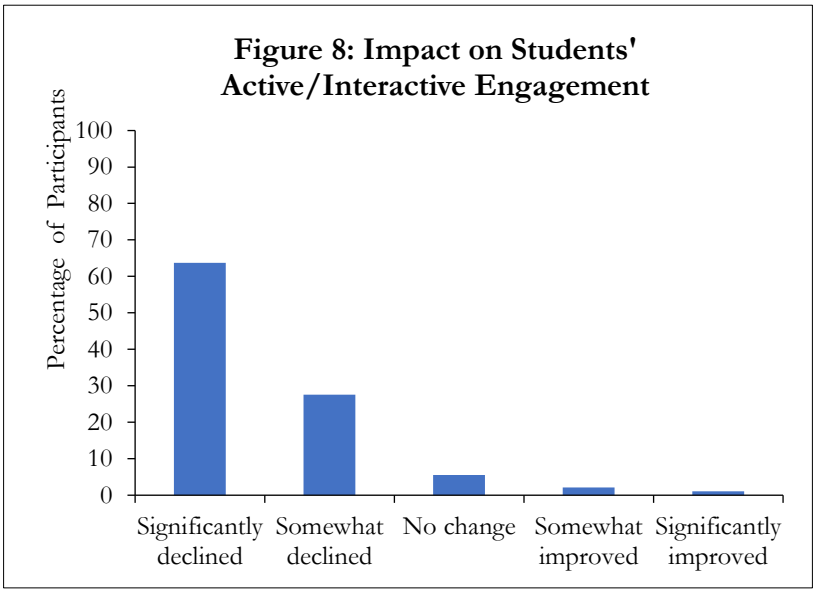
In relation to motivation and readiness to learn, 91.1% of educators reported that students "significantly declined" (62.6%) or "somewhat declined" (28.5%), while 5.6% reported "no change," 1.9% reported "somewhat improved" and 1.4% reported "significantly improved." Similarly, 85.03% of families reported that their child/children "significantly declined" (48.45 %) or "somewhat declined" (36.58%) with respect to motivation and readiness to learn, while 10.03% reported "no change", 2.54% reported "somewhat improved" and 2.4% reported "significantly improved".

> *"It is not possible to ensure engagement of students during online learning or for teachers to fully gauge how the class is doing. Also, teachers are unable to properly assess and provide support for individual students." - Parent*

"I did not feel like doing anything so I had to force myself to which affected my mental health significantly. When i had science and math class I would cry like everyday because I never understood anything my teachers taught online." – Grade 10 student

When asked about their motivation to learn, 80% of students in Grades 5 to 8 reported "I'm less motivated in an online class", 17.5% reported "I was motivated the same in an online class as in an in-person class" and 2.5% reported "I'm not sure". It is worth noting that no students reported being more motivated when engaging in virtual learning. Similarly, 84.38% of students in Grades 9 to 12 reported that they "significantly declined" (59.38%) or "somewhat declined" (25%) in motivation and readiness to learn, while 6.25% reported "no change", and 9.38% reported "significantly improved". Again, no students reported that their motivation and readiness improved.

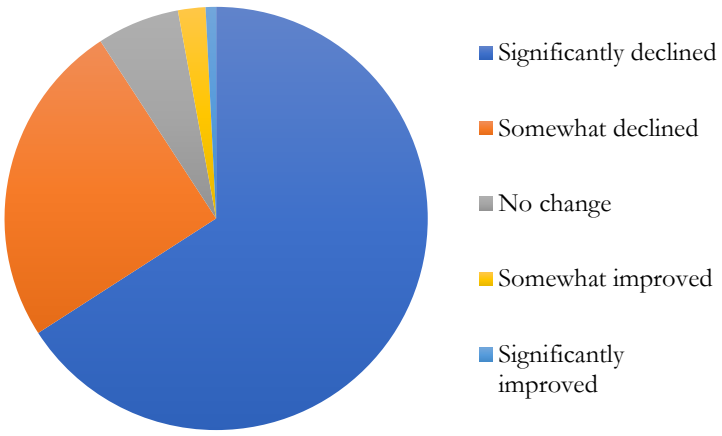
91.3% of educators reported that students' active/interactive engagement "significantly declined" (63.7%) or "somewhat declined" (27.6%), while 5.5% reported "no change", 2.1% reported "somewhat improved" and 1.1% reported "significantly improved" (see figure 8).



Attention and Ability to Focus and Concentrate

90.8% of educators reported that students' attention span and ability to focus and concentrate "significantly declined" (65.9%) or "somewhat declined" (24.9%), while 6.3% reported "no change," 2.1% reported "somewhat improved" and 0.8% reported "significantly improved" (see figure 9).

Figure 9: Impact on Students' Attention Span and Concentration



Similarly, the majority of families (77.48%) reported that their child/children's attention span and ability to focus and concentrate "significantly declined" (41.36%) or "somewhat declined" (36.12%), while 18.98% reported "no change", and 3.54% reported "somewhat improved" (1.98%) or "significantly improved" (1.56%).

When asked about their ability to pay attention, 67.5% of students in Grades 5 to 8 reported "I could not pay attention most of the time", 15% reported "my attention was the same in an online class and in an in-person class" and 15% reported "I could pay attention most of the time". The remaining 2.5% of students stated "I'm not sure". In a similar trend, 87.1% of students in Grades 9 to 12 reported that their attention span and ability to focus and concentrate "significantly declined" (64.56%) or "somewhat declined" (22.58%), while 9.68% reported "no change", and 3.23% reported "somewhat improved". No students reported a significant improvement.

Home-based Support

The majority of educators as well as families reported that students require consistent support at home in order to engage in virtual learning. Specifically, 89% of educators working with elementary students reported that it is "extremely difficult" (64.1%) or "difficult" (24.9%) for elementary students to learn in a virtual classroom without

consistent support from families, while 2% reported “no change”, 6.8% reported “a little difficult” and 2.2% reported “not at all difficult.” Similarly, 86.29% of families reported that it is “extremely difficult” (65.72 %) or “difficult” (20.57 %) for elementary students to learn in a virtual classroom without consistent support from their families. While 1.79% reported “no change”, and 9.24 % reported “a little difficult” (6.8%) or “not at all difficult” (2.68 %). The analysis of the qualitative data shared by families indicated the following themes:

- Frequent need for technical support
- Frequent need for academic support
- Need for parent/guardian/caregiver proximity
- Need for support to stay on task/focused

Additionally, families noted that the degree of support required affected their work/other responsibilities as well as family relationships, and increased their mental health concerns (e.g., anxiety, depression).

“Young people don’t have the capacity to sit in front of a screen and learn all day.” – Parent

“I had to take a leave without pay because it was completely impossible.” - Parent

Most educators working with secondary students (64.4%) reported that it is “extremely difficult” (18.4%) or “difficult” (46%) for secondary students to learn in a virtual classroom without consistent support from families, while 6.7% reported “no change”, 25.1% reported “a little difficult”, and 3.8% reported “not at all difficult.” Similarly, 61.25% of families reported that it is “extremely difficult” (21.95%) or “difficult” (39.29%) for secondary students to learn in a virtual classroom without consistent support from families, while 8.39% reported “no change”, 23.39% reported “a little difficult” and 6.96% reported “not at all difficult”.

Access to Required Resources

The majority of educators expressed concerns regarding student access to the resources required for effective learning. These concerns emerged in the context of several of the qualitative responses. Specifically, 72.8% reported being “extremely concerned” (42.5%) or “concerned” (30.3%) about students’ ability to access the resources required to engage in virtual learning (e.g., space, technology; learning materials), while 22.6% reported “somewhat concerned” and 4.6% “not at all concerned.”

Just under half the participating families (47.66%) reported being “extremely concerned” (23.69%) or “concerned” (23.97%) about their child/children’s ability to access the resources required to engage in virtual learning, while 27.52% reported “somewhat concerned” and 24.82% reported “not at all concerned”. It is important to note that the proportion of families in the “High SES” group in the current sample was significantly greater than families in the “Lower SES” category.

“Not all families have reliable technology, internet, printers or physical space to do remote learning. With one parent working at home and 2 children doing remote learning, it was very chaotic and distracting for everyone.” - Parent

“We are fortunate enough to be able to provide our children with what they need. Some of their friends' families are not in this position.” – Parent

“Lack of space because multiple people in the family had to work from home, and lack of Internet.” – Parent

When asked whether they have the things they need for online learning (e.g., space, computer, notebooks, and other learning materials), 59% students in Grades 5 to 8 reported “I have everything I need”, 28.21% reported “I have some of the things I need” and 12.82% reported “I don't have what I need”. Just under half of students in Grades 9 to 12 reported that they were “not at all concerned” regarding their ability to access resources needed to participate in online learning (48.39%), while16.13% reported being “a little concerned”, and 35.48% reported being “concerned” (25.81%) or “extremely concerned” (9.68%). When asked to share more about what they did not

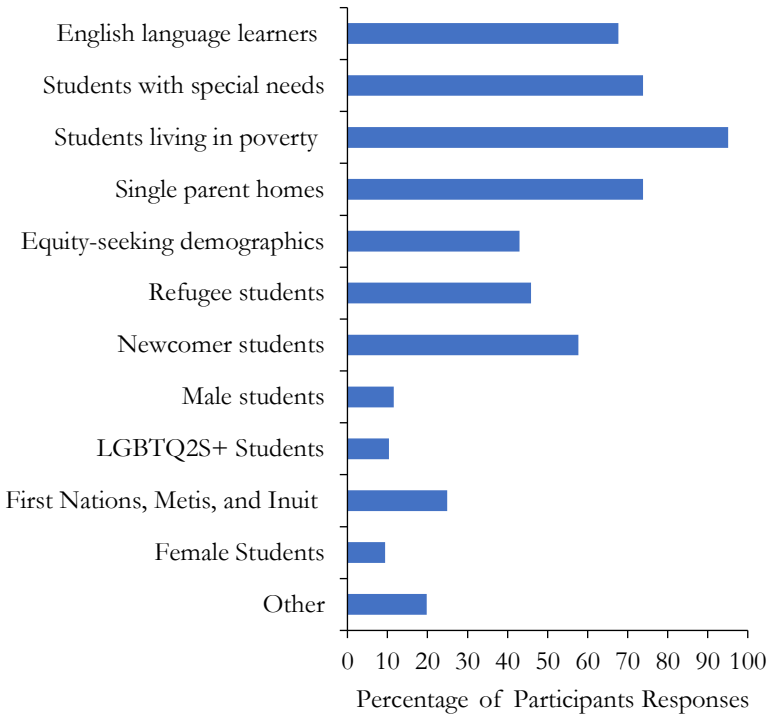
have access to, students shared examples such as adequate desk space, poor Wi-Fi, printer and printer ink, textbooks, instruments for music class, and inadequate/old tablets. When asked to share more about what they did have access to, students shared the following examples: adequate space, good Wi-Fi, support from parents and good technology".

"We live in a rural area and the wifi was not strong enough for all of us to go to all the meets. We also did not have enough computers for the 4 of us to use."– Grade 8 student

"Poor internet, old iPad which shuts down, does not save information and needs to be charged while using." – Grade 10 student

67.4% of educators reported being aware of specific student populations/cohorts who are experiencing difficulty accessing the resources required to participate in virtual learning, 22.5% reported "not sure" and 10.1% reported "not aware". Figure 10 reflects student populations identified as experiencing difficulty accessing the required resources to participate in virtual learning.

Figure 10: Student populations/cohorts Experiencing Difficulty

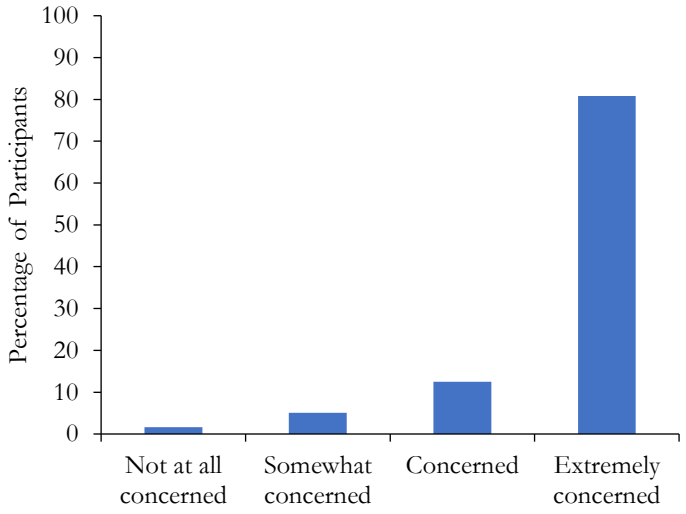


The majority of Grade 9 to 12 students (68.75%) with learning challenges or identified exceptionalities reported that their needs were “not at all supported” (43.75%) or only “somewhat supported” (25%), while 31.25% reported that their needs were “supported”, with no students reporting their needs as being “extremely supported”.

HYBRID PEDAGOGICAL MODEL

93.3% of educators who engaged in hybrid teaching reported being “extremely concerned” (80.8%) or “concerned” (12.5%) about the impact of the hybrid model of teaching and learning (e.g., planning, instruction, assessment, evaluation, reporting), while 5.1% reported being “somewhat concerned” and 1.6% reported “not at all concerned” (see figure 11).

Figure 11: Impact of the Hybrid Model on Teaching and Learning



“One of my students and their siblings had to sit in a school parking lot every day to access internet service.” - Teacher

“Students with autism who are accustomed to rich supports were left on their own. EAs we're not assigned to this group which I found shocking. I know of several EAs who really had no assignment.” - Teacher

“A number of my students did not have access to simple supplies like pencils and paper.” - Teacher

“I had several Indigenous students and students living in rural areas who had little Internet connectivity.” – Teacher

Although families acknowledged that hybrid leaning was necessitated by the COVID-19 pandemic, they reported concerns in relation to the hybrid model of learning. The

majority of participants (72.37%) reported their child's/children's experience with hybrid learning as "negative, while 11.4% reported a "neutral" experience and 4.66% reported a "positive" experience (11.57% reported "not sure"). Analysis of the qualitative survey data yielded the following themes in relation to concerns expressed by families:

- Split/reduced teacher attention and support
- Hybrid learning should not be an option (in-person learning is most effective)
- Disrupted learning/limited learning/learning gaps
- Negative impact on social skills
- Mental health concerns
- Privacy/confidentiality concerns
- Reduced motivation and engagement

> *"This is NOT an equitable or fair model of delivery for students in person, remote students or the teachers struggling to reach all learners!" – Parent*
>
> *"Two different operating methods at both ends – impossible to meet the needs of these two methods at the same time." – Parent*

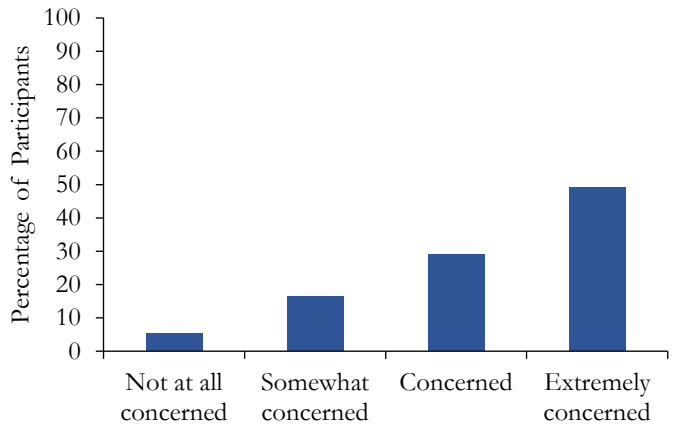
When asked about their experience with hybrid learning, 81.07% of students in Grades 5 to 8 indicated "I didn't like it", 6.06% indicated "I liked it" and 12.87% reported "I'm not sure". Similarly, the majority of Grade 9 to 12 students (75.9%) reported being "extremely concerned" (46.7%) or "concerned" (29.2%) about the impact of the hybrid model on their learning, 17.3% reported being "somewhat concerned" and 6.8% reported "not at all concerned". Analysis of the student qualitative data demonstrated the following themes in relation to their experience with hybrid learning:

- Reduced motivation
- Reduced opportunities for engagement (cannot see and/or hear)
- Distracting environment
- Mental health concerns

RELATIONSHIPS

It is widely acknowledged that healthy and positive student-teacher and peer relationships have a significant impact on student wellbeing and learning. The importance of educator-student and peer relationships was reflected across participant responses throughout the survey but also captured independently as one of the themes.

Figure 12: Impact on Developing Positive Relationships with Students



78.3% of educators reported being "extremely concerned" (49.2%) or "concerned" (29.1%) about developing positive relationships with students (e.g., establishing trust), 16.5% reported being "somewhat concerned" and 5.3% reported "not at all concerned" (see figure 12).

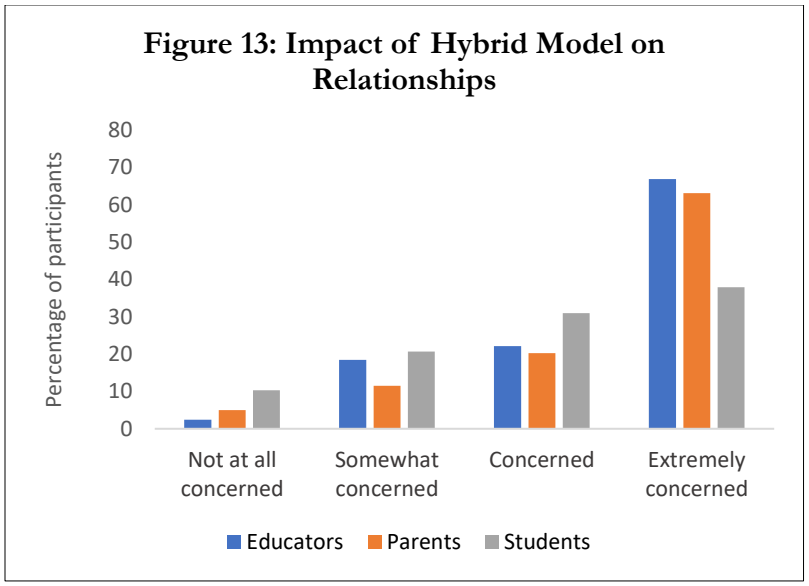
When students were asked how the shift to virtual classes affected their relationship with their teachers, approximately half of students in Grades 5 to 8 (52.5%) reported "it didn't change from before", 30% reported that "it got worse than before", 15% reported "it got better than before" and 17.5% reported "I'm not sure". When asked how the shift to virtual classes affected their relationship with their classmates and

"I didn't feel comfortable talking to her [teacher] like I usually do in the mornings before class starts or at lunch time." – Grade 5 student

"I felt forgotten at times" – Grade 5 student

"No one knew me or who I am." – Grade 11 student

friends, 47.5% reported “it got worse than before”, 35% reported “it didn’t change from before”, and 17.5% reported “I’m not sure” (no students reported that their relationships with peers improved). The majority of students in Grades 9 to 12 (79.31%) reported being “extremely concerned” (48.28%) or “concerned” (31.03%) about the effect of virtual learning on developing positive relationships with their teachers and peers, while 10.35% reported being “somewhat concerned” and 10.34% reported “not at all concerned”. They stated that it is not possible to develop positive relationships with teachers and peers virtually. Furthermore, they shared that they did not meet any new peers in a virtual environment.



89.1% of educators reported being “extremely concerned” (66.9%) or “concerned” (22.2%) about the impact of the hybrid model on relationships, 18.5% reported being “somewhat concerned” and 2.4% reported “not at all concerned”.

Similarly, 83.46% of families reported being “extremely concerned” (63.18%) or “concerned” (20.28%) about the impact of the hybrid model on relationships, 11.54% reported being “somewhat concerned” and 5% reported “not at all concerned”. The qualitative analysis of the survey data yielded the following themes:

- Limited to no student-teacher relationships/interactions
- Limited to no peer interaction (limited time or opportunity to connect/play)
- Negative impact on communication/social skills
- Absence of face-to-face personal experience
- Frustrating/challenging experience to establish relationships

- Challenging for shy students to establish relationships

> *"Hybrid learning is detrimental to both the students in class and online. Not only are teachers expected to split their attention among 30+ students in an FDK class (which is way too many to begin with) but now they need to be looking at a computer screen which takes their eyes and attention off of the students in the class. This has a significantly negative impact on any feeling of community, safety and inclusion teachers try to foster in their classrooms. Students are falling further and further behind and it will take YEARS to help them catch up to their expected Grade levels." – Parent*
>
> *"The teacher doesn't have time to attend to the students attending virtually because his/her priority has*
> *"I didn't have any relationships with people." – Grade 10 student*
>
> *"It's hard to build new relationships with people online, especially hybrid." – Grade 11 student*

The majority of students in Grades 9 to 12 (68.97%) reported being "extremely concerned" (37.93%) or "concerned" (31.03%) about the impact of the hybrid model of learning on their relationships, 20.69% reported being "somewhat concerned" and 10.35% reported "not at all concerned" (see figure 13). The most frequent qualitative responses emphasized difficulties with developing connections with others.

Relationships with Colleagues and Families

The majority of educators (68.1%) reported being "extremely concerned" (37.1%) or "concerned" (31%) about developing and maintaining positive relationships with colleagues, 22.2% reported being "somewhat concerned" and 9.7% reported "not at all concerned". Moreover, 60.6% reported being "extremely concerned" (29.5%) or "concerned" (31.1%) about developing positive relationships with families of students, 25.9% reported being "somewhat concerned" and 13.5% reported "not at all concerned". Similarly, 63% of families reported being "extremely concerned" (37.16 %) or "concerned" (25.84%) about the impact of virtual teaching and learning on opportunities to develop positive relationships with their child/children(s) teachers, 19.16% reported being "somewhat concerned" and 17.85% reported "not at all concerned".

WELLBEING

When asked about the overall impact of virtual learning on their families' wellbeing, 81.61% of families reported that their families' wellbeing "significantly declined" (39.91%) or "somewhat declined" (41.7 %), while 11.21% reported "no change" and 7.18% reported "somewhat improved" (4.93%) or "significantly improved" (2.24%). Analysis of the qualitative survey data yielded the following themes:

- Demanding need to multitask (e.g., distracted at work/interruptions)
- Increased stress, anxiety, depression, and/or fatigue
- Damaged family relationship/increased conflict in the home
- Managing challenging schedules
- More time together

"My family could not function while my child was online learning. She did not learn and we were not able to work." - Parent

"I worked from 6:30 in the morning to 10:30 at night every day. All day long I would balance my work and supporting my children. I was happy if I had 30 minutes to go for a walk everyday." - Parent

"With younger children, they needed more help during school time, leading to interruptions in work. Thus, after school, then I tried doing work, leading to less family time." - Parent

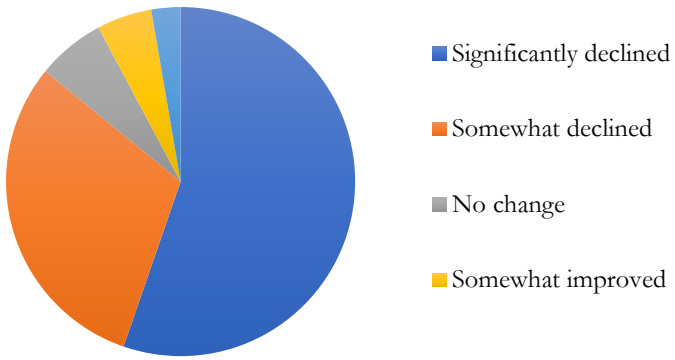
Similarly, 75.4% of educators reported a "significant" (43.7%) or "some" (31.0%) negative impact on their families' wellbeing, while 14.1% reported "minimal impact" and 10.4% reported "no impact." The themes that emerged from analysis of the qualitative data were the same as those that surfaced from the family data.

PHYSICAL WELLBEING

EDUCATORS

85.9% of educators reported their physical well-being "significantly declined" (55.3%) or "somewhat declined" (30.6%), while 6.3% reported "no change", 5.1% reported "somewhat improved" and 2.7% reported "significantly improved" (see figure 14).

Figure 14: Impact on Educators' Physical Well-being

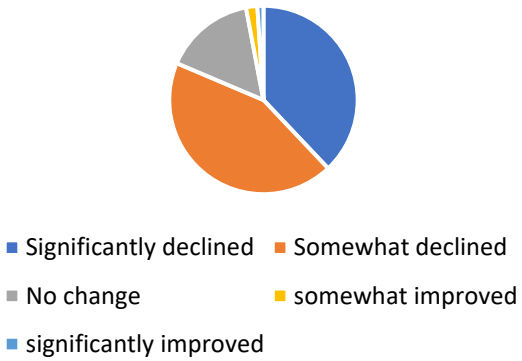


- 85% reported their level of physical activity "significantly declined" (60.6%) or "somewhat declined" (24.4%), while 7.9% reported "no change", 5.1% reported "somewhat improved" and 2% reported "significantly improved."
- 80.1% reported new physical ailments or worsening of pre-existing ailments due to the nature of virtual teaching (e.g., deteriorating eyesight, headaches/migraines, muscle aches, sleep disturbances), while 19.9% reported no change.

STUDENTS

When invited to reflect on the physical wellbeing of students, 92.5% of educators reported that students' physical wellbeing (e.g., degree of physical movement/exercise; access to food/healthy diet) "significantly declined" (58%) or "somewhat declined" (34.5%), while 5.7% reported "no change", 1.1% reported "somewhat improved" and 0.6% reported "significantly improved". In a similar trend, 81.4% of families reported their

Figure 15: Impact on Students' Physical Well-being



child's/children's physical wellbeing "significantly declined" (37.95%) or "somewhat declined" (43.45%), while 15.63% reported "no change", 1.94% reported "somewhat improved" and 1.04% reported "significantly improved" (see figure 15). The qualitative analysis of the family reports indicated the following themes:

- Less physical activity
- Increased fatigue
- Sleep disturbances
- Increased aches and pains
- Weight gain

> *"My children had tantrums all of the time because of excessive screen time. We had to consult with my daughter's paediatrician because she had chronic headaches at age 5." - Parent*
>
> *"My children were less active, were mostly occupied by screen time and no question sleep, eating, and physical activity level sharply declined." – Parent*
>
> *"My daughter had much less energy, stayed in bed all the time and gained weight." - Parent*

When students in Grades 5 to 8 were asked how virtual learning affected the way they felt physically, 63.16% reported "I felt worse than before", 26.32% reported "I felt the same as before", 2.63% reported "I felt better than before" and 7.9% reported "I'm not sure". When asked how virtual learning affected how much physical activity they engaged in, 89.48% reported "I got less physical activity than before", 5.26% reported "I did as much physical activity as before", and 5.26% reported "I got more physical activity than before".

> *"I gained weight, got less exercise, had no separation from school and home. I spent too much time on social media." – Grade 11 student*

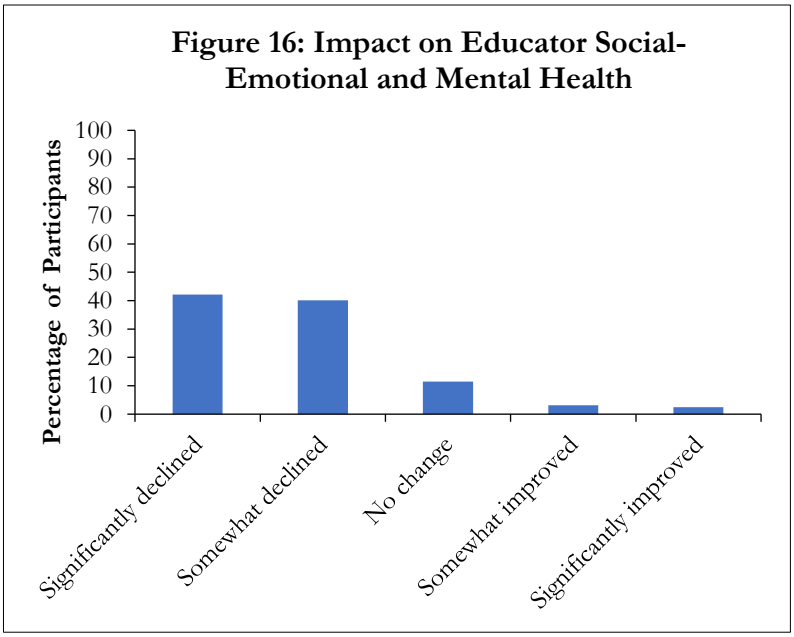
In relation to their physical wellbeing, 79.31% of students in Grades 9 to 12 reported that they "significantly declined" (48.28%) or "somewhat declined" (31.03%), while 10.35% reported "no change", 6.9% reported "somewhat improved" and 3.45% reported "significantly improved". The vast majority (86.21%) reported that their level of activity and movement "significantly declined" (48.28%) or "somewhat declined" (37.93%), while

13.79% reported “no change”. No students in Grades 9 to 12 reported that they “somewhat improved” or “significantly improved”. When asked about whether they experienced any new physical conditions or worsening of pre-existing physical conditions because of virtual learning, 67.86% reported “yes” while 32.14% reported “no”. Examples reported by students in Grades 5 to 12 included headaches, deteriorating eyesight, body aches, fatigue, sleep disturbances, and eating disorders.

SOCIAL-EMOTIONAL AND MENTAL WELLBEING

EDUCATORS

83% of educators reported their social-emotional and mental well-being “significantly declined” (42.1%) or “somewhat declined” (40.9%), while 11.5% reported “no change”, 3.1% reported “somewhat improved” and 2.4% reported “significantly improved” (see figure 16).



- 50.5% of educators reported their anxiety levels “significantly increased” (29.3%) or “somewhat increased” (30.2%), while 25.1% reported “no change”, and 15.4% reported “somewhat decreased” (8.2%) or “significantly decreased” (7.2%).

- 45.9% of educators reported their depression levels “significantly increased” (19.5%) or “somewhat increased” (26.4%), while 42.7% reported “no change”, and 11.4% reported “somewhat decreased” (6.4%) or “significantly decreased” (5%).

- 50.2% of educators reported being “extremely concerned” (26.5%) or “concerned” (23.7%) regarding the availability of, or access to, the resources required to support their emotional and mental wellbeing, 28% reported being “somewhat concerned” and 21.8% reported “not at all concerned”.

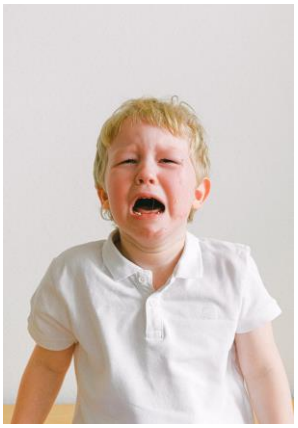
31% of educators reported seeking mental health support, professional services, or counseling due to the demands of virtual teaching.

FAMILIES AND STUDENTS

83.01% of families reported their children’s social-emotional and mental well-being “significantly declined” (37.26%) or “somewhat declined” (45.75%), while 14.16% reported “no change”, and 2.83% reported “somewhat improved” (1.94%) or “significantly improved” (0.89%).

Analysis of the qualitative family survey data demonstrated the following themes:

- Loneliness/isolation
- Increased sadness and depression
- Increased agitation/anger/mood swings
- Increased emotionality/emotion regulation difficulties
- Increased anxiety and stress



"They were so depressed, hopeless, cut off from everyone. Anger issues, acting out, self-harm. One attempted suicide. It has been horrible." – Parent

"He became depressed. His anxiety increased. His sleep issues worsened. His motivation for in class learning declined. His self-esteem was significantly reduced, and he became hopeless at times." – Parent

"Our daughter in Grade 6 spiralled into a depressive state with not being able to socially be with her friends. She became a completely different girl." – Parent

"My child NEVER had panic attacks prior to virtual learning. She is 8 years old is now suffering from severe anxiety returning back to school. While online she was very withdrawn and did not speak with friends. She had had a difficult time with friends socially before virtual learning and this magnified her social issues." – Parent

"To manage her anxiety because she started cutting her hand." - Parent

- 52.06% of families reported being "extremely concerned" (30.29%) or "concerned" (21.77%) about the availability of or access to the resources required to support their child's/children's emotional and mental wellbeing, while 24.96% reported being "somewhat concerned" and 22.98% reported "not at all concerned."

"Mental health support is not easy to find and what is available is also virtual so my children don't want to take part." – Parent

"The school's newsletter and the school board's website always said where to go for help but my child would need a proper, licensed therapist or counsellor who they could see in person." - Parent

- 28% of families reported seeking mental health support, professional services, or counselling for themselves due to the demands of virtual learning.

31% of families reported seeking mental health support, professional services, or counselling for their child/children due to the demands of virtual learning.

"My wife had two suicide attempts during the last two years and I have been overwhelmed beyond what is reasonable to be expected. My employer does not believe that babysitting the kids should have been an expectation of the parents, but we had to do it, one more stress." – Parent

"Probably should have though. The stress of trying to manage my own job as well as helping them was tremendous!" – Parent

"No, but I decided that if the last virtual learning went on longer than two weeks that I would take a stress leave so I could provide my daughter with support, attention, engagement, outdoor exercise, reading one-on-one, etc…." – Parent

- 82.76% of Grade 9 to 12 students reported that their emotional and mental wellbeing "significantly declined" (48.28%) or "somewhat declined" (34.48%) due to the shift to virtual learning, while 13.79% reported "no change" and 3.45% reported "somewhat improved". No students reported that their emotional and mental wellbeing "significantly improved". Most commonly, students reported mental health difficulties and/or negative emotional states such as depression, anxiety, and feelings of isolation.

92.2% of educators reported that the social-emotional and mental health of students "significantly declined" (43.3%) or "somewhat declined" (48.9%), while 5.3% reported "no change", 1.9% reported "somewhat improved" and 0.6% reported "significantly improved".

- 46.43% of Grade 9 to 12 students reported being "extremely concerned" (17.88%) or "concerned" (28.57%) about the availability or accessibility of resources needed to support their emotional and mental wellbeing, 28.57% reported "somewhat concerned", and 25% reported "not at all concerned".

"I felt defeated with nothing to look forward to. I would be at my desk and not move for the whole day and then have to be at my desk to get my homework done. I felt depressed." - Grade 10 student

"I felt discouraged. Cried very often. Was very mad that I couldn't see anyone Went through a depressive stage." - Grade 10 student

"Never had depression before, did during online school." - Grade 11 student

"Felt tired and sad a lot" - Grade 9 student

"Felt depressed and lonely" - Grade 10 student

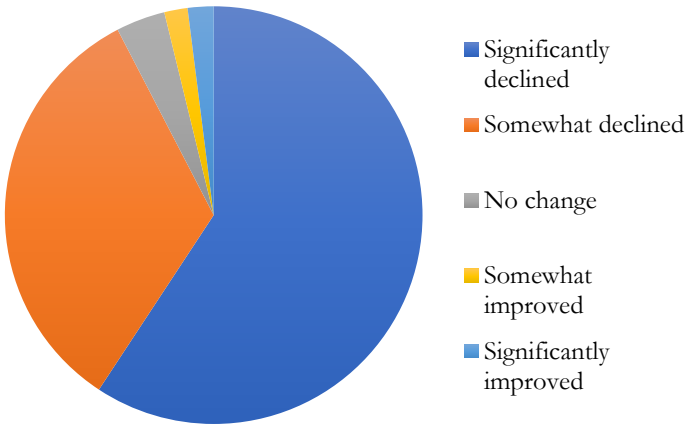
"I don't have someone to whom I can talk to, who is certified. i don't have the chance to speak about my problems to my friends." – Grade 11 student

"Our school board did a good job sending out resources, but many were online and I didn't access them." - Grade 11 student

"You don't have full support of people around you during online school."- Grade 10 student

"What resources? When people cannot physically be there, I cannot talk to them." – Grade 10 student

Figure 17: Impact on Students' Feelings of Isolation and Lonliness



92.3% of educators reported that students' feelings of isolation and loneliness "significantly worsened" (59.2%) or "somewhat worsened" (33.1%), while 3.8% reported "no change", 1.8% reported "somewhat improved" and 2% reported "significantly improved" (see figure 17).

- 86% of families reported that their child/children "felt significantly lonelier" (47.84%) or "felt somewhat lonelier" (48.9%), while

12.67 % reported “no change”, and 1.33% reported that their child/children “felt somewhat less lonely” (0.29%) or “felt significantly less lonely” (1.04%).

- 68.42% of Grade 5 to 8 students reported “I felt lonelier than before”, 26.32% reported “I felt the same as before”, and 5.26% reported “I am not sure”. No students reported feeling less lonely in comparison to attending in-person classes.

82.76% of Grade 9 to 12 students reported that they felt “significantly lonelier” (62.07%) or “somewhat lonelier” (20.69%), while 13.79% reported “no change”, and 3.45% reported that they “somewhat decreased in their feelings of loneliness”. No students indicated that they “felt significantly less lonely”.

PROFESSIONAL WELLBEING: EDUCATORS

Educators expressed concerns in relation to their motivation to continue teaching, their sense of self-efficacy and their ability to do their work.

- 81.3% reported that their motivation to continue teaching, including their sense of professional fulfillment or morale, “significantly declined” (47.9%) or “somewhat declined” (33.4%), while 13.4% reported “no change”, 2.2% reported “somewhat improved” and 3.1% reported “significantly improved”.
- 70.9% reported that their perception or sense of self-efficacy “significantly declined” (30%) or “somewhat declined” (40.9%), while 23.2% reported “no change”, 3.7% reported “somewhat improved” and 2.2% reported “significantly improved”.
- 75.3% reported that the ability to do their work “significantly declined” (29.8%) or “somewhat declined” (45.6%), while 18% reported “no change”, and 4.3% reported “somewhat improved” and 2.4% reported “significantly improved”.

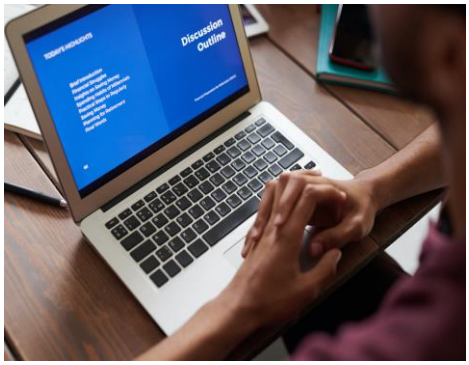
PRIVACY

Although privacy emerged as one of the main themes during the focus group discussions, the level of concern was less pronounced based on participant survey responses.

- 54.2% of educators reported being “extremely concerned” (33.2%) or “concerned” (21.0%) about preserving their own privacy, 32% reported being “somewhat concerned,” and 13.9% reported being “not at all concerned.”
- 55.1% of educators reported being “extremely concerned” (30.8%) or “concerned” (24.3%) about maintaining the privacy of students, 33.3% reported being “somewhat concerned” and 11.6% reported being “not at all concerned”.

> *“Too many to even begin. School is a safe haven for some. A child with a family of 6 living in a basement apartment doesn't want that displayed for the whole class online so they simply don't log on…” - Primary Teacher*

- 37.06% of families reported being “extremely concerned” (20.06%) or “concerned” (15.23%) regarding their family’s privacy, with 30.32% reporting “somewhat concerned” and 34.39% reporting “not at all concerned”. Analysis of the qualitative survey data, based on the responses of participants who conveyed concerns, demonstrated the following themes: Home environment was visible and heard/did not like being exposed; worried about others’ inappropriate behaviour/people walking behind students; felt like invasion of privacy; had to alter daily activities; concerned about children’s bedrooms.



"I do NOT want teachers and other students in my home environment; virtual learning takes away my ability to decide who comes into my home." - Parent

"We are privileged and acknowledge that. But someone who is less privileged would potentially feel uncomfortable." – Parent

"I didn't like others being able to see into our home. There were a number of us on the computer, and there are only certain places in a house. Sometimes you could hear phone calls in the background." - Parent

"My children have their own rooms and their individual technology, so they were "at school" and when school was over, their computers were turned off. There was a clear schedule that did not affect the family." – Parent

"It was a classroom of various household members all listening and seeing...I had no idea who was listening or seeing my kids with all those cameras on. I certainly saw some things in other people's homes that were disturbing (i.e. abusive child to parent and everyone heard the profanities and saw the physical abuse of a 10-year old's anger unleashed on a parent and a young teacher frozen about what to do!!!)" – Parent

A smaller proportion of Grade 9 to 12 students articulated higher degrees of concern about maintaining their privacy with 28.57% reporting being "extremely concerned" (14.29%) or "concerned" (14.29%), 32.14% reporting "somewhat concerned" and 39.27% reporting "not at all concerned". Those who expressed concern shared possible negative implications, such as being recorded and the video being shared. They also discussed experiencing negative emotional states, such as feeling judged, worrying, and feeling anxious, as a result of being on camera.

50.8% of educators reported being "extremely concerned" (26.5%) or "concerned" (24.3%) regarding students experiencing or exhibiting feelings of shame or embarrassment due to lack of privacy (e.g., students' behavioural challenges being visible to other families/students; socio-economic status; living conditions), 33.7% reported being "somewhat concerned," and 15.6% reported "not at all concerned".

The question pertaining to privacy was further unpacked for the younger group of students. When students in Grade 5 to 8 were asked whether they felt comfortable turning their camera on in an online class, 60.53% reported "no" and 34.21% reported "yes", with 5.26% reporting "I'm not sure". When asked whether they felt comfortable participating in activities using a microphone during an online class, 57.9% reported

"yes" and 36.84% reported "no", with 5.26% reporting "I'm not sure". When asked whether they felt comfortable with where they participate in their virtual classes (e.g., from their room or kitchen table), 71.05% reported "I'm comfortable" and 15.79% reported "I'm not comfortable", with 13.16% reporting "I'm not sure".

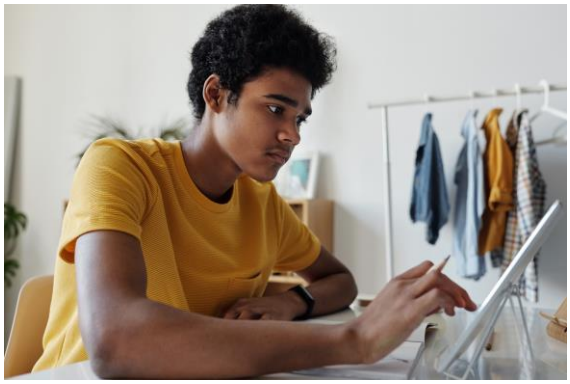
"...if I turned it [camera] on then I couldn't learn anything because the lesson stream failed. The camera makes everyone look weird and then classmates hear my Mom's business calls and everything else that goes on. This is my home and school needs to stay out of my home."
- Grade 6 student

"I feel that everyone is looking at me and judging everything they see."- Grade 10 student

"Don't want my family around or bedroom on camera." - Grade 9 student

"I had to worry about the video camera being on and someone taking a screenshot to modify and post on Instagram - those bullies can be a real problem." - Grade 11 student

"having the camera on gives me anxiety because I know some peers spend the whole time catching people off guard doing regular things but making fun of them. Everyone can see my room and hear what is going on in my house." - Grade 11 student



The majority of educators (60.8%) reported being "extremely concerned" (31.3%) or "concerned" (29.5%) regarding students being able to share their feelings, thoughts, experiences and concerns safely and appropriately, 31.2% reported being "somewhat concerned", and 8% reported being "not at all concerned". Similarly, when students in Grades 5 to 8 we're asked whether they felt comfortable sharing their feelings, thoughts, experiences, and concerns in an online class, 68.42% indicated "I'm not comfortable", 18.42% reported "I'm comfortable", and 13.16% reported "I'm not sure". The majority of students in Grades 9 to 12 (57.14%) reported being "extremely concerned" (32.14%) or "concerned" (25%) about being able to share their feelings, thoughts, experiences and concerns in a virtual setting, with 25% reporting being "somewhat concerned" and 17.86% reporting "not at all concerned".

Families expressed less concern regarding their child/children being able to share their feelings, thoughts, experiences and concerns safely and appropriately, with 39% reporting being “extremely concerned” (22%) or “concerned” (17%), 30% reporting being “somewhat concerned” and 31% reporting “not at all concerned”.

85.6% of educators reported “no” (58.4%) or “not sure” (27.2%) to feeling that they have the resources (e.g., information about clear protocols and procedures) to respond to issues or concerns that may unexpectedly occur in a virtual context. The remaining 14.4% reported “yes” to feeling that they have the resources to respond.

OVERALL EXPERIENCE: VIRTUAL TEACHING AND LEARNING

Overall, the majority of educators reported a negative experience in relation to virtual teaching. More specifically, 74.9% indicated that their virtual teaching experience was “negative,” 12.6% reported a “neutral” experience, 8.8% reported a “positive” experience, and 3.7% were “not sure”.

“Strong consideration needs to be made in not allowing online/hybrid modeling from happening. Our kids deserve better when it comes to their education social emotional and mental well-being.” - Parent

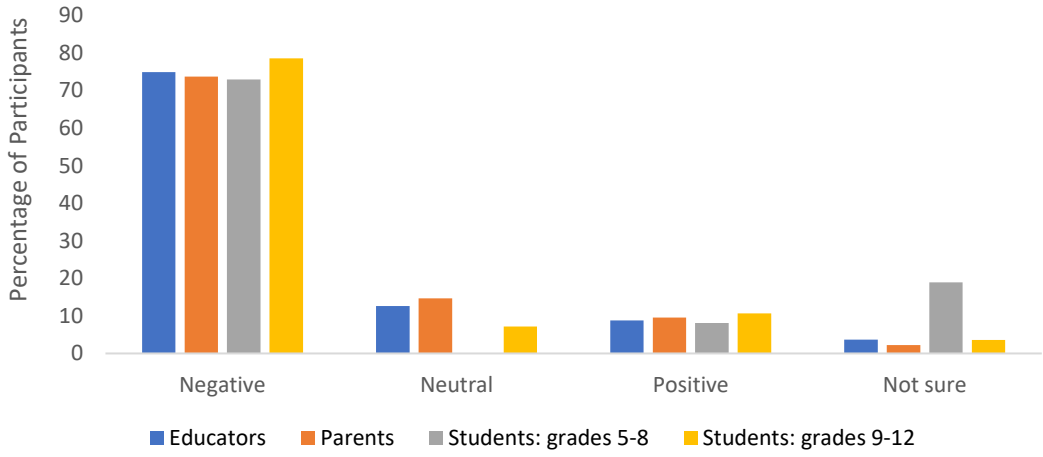
“Online learning is a nightmare for all stakeholders.” - Parent

“Independent learning and online lessons can be very useful when delivered in a manner that helps the learning environment. Forcing children to take a full course online with minimal training, support and resources is DETRIMENTAL to a child's motivation to learn. By eliminating the social aspect involved in learning, you create a void in the experience of a young person, and skew their sense of the world and how society operates. Compulsory courses without proper training, guidance and support is not education.” - Parent

Similarly, the majority of families (73.72%) reported their child’s/children’s experience with virtual learning as “negative”, 14.65% reported a “neutral” experience, 9.52% reported a “positive” experience, and 2.12% responded as “not sure”. When asked about their virtual learning experience, 72.97% of students in Grades 5 to 8 reported “I don't like online learning” and 8.11% reported “I like online learning”, and 18.92% reported “I’m not sure”. Similarly, 78.57% of students in Grades 9 to 12 reported that

virtual learning experience was “negative”, 7.14% reported a “neutral” experience, 10.71% reported a “positive”, and 3.57% reported “not sure” (see figure 18).

Figure 18: Overall Experience with Virtual Teaching and Learning

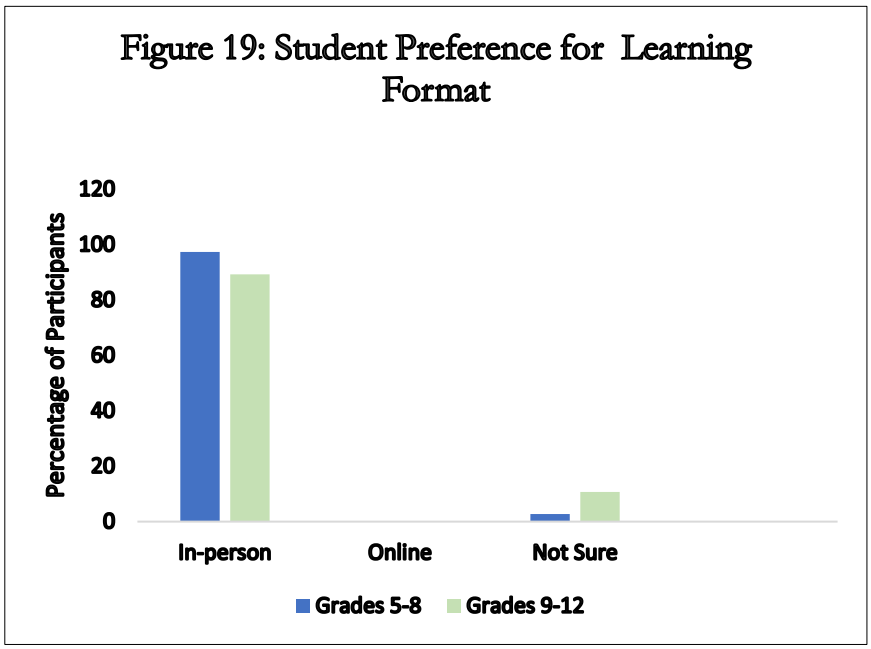


“It was a whirlwind of emotions and it felt super stressful”- Grade 7 student

“Please don't make me ever do this again.” - Grade 5 student

“It was lonely” - Grade 7 student

Additional student responses demonstrated a similar trend. Students were asked to reflect on whether they prefer to engage in virtual learning or in-person learning in a physical classroom, the vast majority of Grade 5 to 8 students (97.3%) reported a preference for "learning in-person in a physical classroom" (2.7% reported "I'm not sure").



Similarly, the vast majority of Grade 9 to 12 students, 89.27%, reported a preference for "learning in-person in a physical classroom", with 10.71% reporting "I'm not sure" (see figure 19).

"In person learning is easier for me to understand and see what the teacher is showing me."
- Grade 5 student

"In person it was easier to concentrate, more engaging, and generally just better."
- Grade 8 student

"I cannot/will not go back to online school." - Grade 11 student

"In-person is one thousand times better than online. Hands down. THE BEST."
- Grade 10 student

Students were also invited to share what they liked and what they did not like about virtual learning. Although the overwhelming majority expressed a general dislike of virtual learning, the absence of the social aspects of in-person learning (relationships) was highlighted as an important factor.

"Let's keep the children in our schools." – Parent

CONCLUSION

The current findings are based on the lived experiences of educators, students, and families, and indicate that virtual learning carried many significant negative implications. Furthermore, the findings show that the hybrid pedagogical model is fundamentally flawed and unsustainable. It is impossible to provide equitable and quality education when attempting to engage two different audiences, in-person and virtually. The implementation of virtual and hybrid models of teaching and learning have heightened concerns around educational equity. As Farhadi and Winton state:

> *"Our study's findings show that teachers in adult education, education in congregate settings (e.g., in group homes), rural, remote, and northern communities, and Intensive Support Programs serving students with autism, and students with physical, developmental, and learning disabilities, struggled to interpret and enact government policies that did not take their students' needs or learning environments into account" (2022, p.5).*

The findings strongly indicate that virtual models of teaching and learning do not provide opportunities to develop and nurture positive student-teacher relationships, support students' social-emotional needs and mental health, support the development and sustainment of positive peer relationships, or engage students in authentic and meaningful academic achievement. The negative impacts on participants' wellbeing, student academic engagement and success, and educational equity are clearly demonstrated through these findings. Moreover, these findings are aligned with those reported by the Canadian Teachers' Federation (2020; 2021) and the Ontario Public School Boards' Association (2021).

The five themes that emerged during the focus group discussions and which informed the development of the surveys were: (1) comfort with information communication technologies and platforms; (2) pedagogy: teaching and learning; (3) relationships; (4) wellbeing; and (5) privacy. It is important to note that although relationships emerged

as an independent theme, concerns around developing and maintaining positive and healthy relationships with others were inextricably integrated throughout participant responses across the themes and are hence, discussed as such.

Comfort with information communication technologies and platforms

Most of the participants indicated being comfortable with respect to using information communication technologies and platforms and no concerns were raised through any of the other qualitative survey responses. Therefore, it is reasonable to conclude that comfort with information communication technologies and platforms on its own did not impact participant experiences in relation to virtual teaching and learning.

Pedagogy: Teaching and learning

The multiple sub-themes that emerged in connection to the theme of "Pedagogy: Teaching and Learning" are discussed below.

Requirements and Resources

The findings indicated a lack of alignment between the government's/Ministry of Education's and school boards' expectations and requirements regarding virtual models of teaching and the resources and supports made available to do so. The gaps identified by educators pertained to the absence and inadequacy of training, technological resources, and other required resources. In addition, the findings suggest that the realities of implementing the hybrid pedagogical model are not reflected in the framework of the expectations and requirements put forth by the government/Ministry of Education. There also appears to be no acknowledgement of the fundamental difference between virtual and in-person teaching and learning by the government/Ministry of Education. The results indicate that school boards' expectations with respect to time required for planning and organizing virtual learning were impractical. Educators also voiced a need for clear and adequate communication from school boards. Educators conveyed the challenges of, and at times the impossibility of, navigating virtual models of teaching and learning amidst these substantial gaps.

Responding to student needs

Educators as well as families expressed concerns around student needs being met in a virtual environment. Supporting student wellbeing and meaningful academic engagement and success were central to these concerns. Similarly, students voiced concerns with respect to their needs being met in a virtual setting. The important role of student-teacher and peer relationships were highlighted as critical elements across all participant responses. Participants discussed challenges around students communicating their needs for support and receiving support (e.g., IEPs; special needs; ELLs; needs of younger students). Moreover, educators discussed difficulties around providing essential one-on-one support for at-risk students (e.g., cutting; suicide attempts; unsafe home environments). Educators and families acknowledged the impossibility of assessing student needs and responding appropriately when students are in fact not visible or heard (videos turned off; mics muted). With the opportunity for connection missing or reduced in a virtual environment, educators are not well positioned to co-regulate and support students' social, emotional (e.g., loneliness), and mental health (e.g., stress; anxiety; depression) needs (Tawfik et al., 2021). Furthermore, students do not express their social, emotional, and mental health needs in a virtual setting (e.g., do not feel comfortable; ELLs are not able to communicate their concerns easily). The ability to engage in meaningful learning requires self-regulation (Kauffman, 2015), which raises the question "how can students be expected to achieve success in a virtual environment when educators are not positioned to support and co-regulate students to build up their self-regulation capacities?"

Participants continuously highlighted the theme of relationships and connections throughout their responses. The absence of opportunities for student-teacher and peer interactions, socialization, and collaboration were emphasized consistently. Educators and families both expressed concerns in relation to the deterioration of students' social and emotional skills (e.g., emotion-regulation; conflict-resolution; empathy). One noteworthy theme which surfaced is that educators and families highlighted an increase in aggression toward, bullying of, and problems with peers. The relationship between wellbeing and prosocial behaviour is bi-directional. In other words, engaging in prosocial

behaviour will enhance wellbeing and fostering wellbeing will promote prosocial behaviour (Davidson, 2022). Hence, it is important that concerns around decreased prosocial behaviour are acknowledged and addressed.

Several fundamental aspects of learning associated with meaningful academic achievement surfaced. Decreased motivation, readiness to learn, attention and concentration, active and interactive engagement, as well as a loss of opportunities for engaging in hands-on learning (e.g., labs) were consistently voiced. These findings are incredibly important, seeing as these aspects of learning are critical for successful learning (Appleton et al., 2008). The findings are also consistent with existing research (Friedman, 2020; Garbe et al., 2020; Walters et al., 2022; Yates et al., 2021). Having insight into factors that lead to detrimental changes in these aspects of learning is necessary if we want to support students to thrive academically. The current findings suggest that a virtual learning environment has a negative impact on student learning for an overwhelming majority of participants.

Participants also expressed concerns in relation to effective and authentic assessment of student progress/achievement. Students articulated difficulties with respect to understanding the material and feeling supported (e.g., a lack of opportunity to ask questions and receive feedback) in a virtual environment. Educators are also responsible for reporting on students' academic progress, which is an additional challenge in this context.

Other aspects that were of concern, based on the experiences of educators, were around student access to resources required for learning and student access to effective learning environments. Given that educators indicated having awareness of specific student populations/cohorts who experienced difficulty with respect to accessing the resources required to participate in virtual learning; they provided some insight into the experiences of these student populations/cohorts. An important factor to note is that the current evaluation draws predominantly from the lived experiences of families and students in higher SES households. Although families and students reflected on the experiences of students in low SES households, they reported less

concern in relation to their own experiences around access to resources required for learning and effective learning environments. Therefore, these experiences are expected to be more pronounced for students and families in lower SES households.

Consistent support at home to aid student learning emerged as another critical barrier to learning. In a virtual environment, educators' ability to observe and monitor student learning is compromised, if not impossible (West et al., 2009). Accordingly, students and families take on additional responsibilities (Ahn, 2011; Oviatt et al., 2016). Although it may be less pronounced with respect to older students, typically, families take on the role of learning and technology support systems in an effort to motivate and help students in more isolating settings (Antoni, 2020; Borup et al., 2020; Hasler-Waters et al., 2014). This required level of support is stressful for families and unsustainable on a long-term basis.

Hybrid Pedagogical Model

Participants articulated concerns about the hybrid model of teaching and learning and viewed it as an inequitable model of delivery. The fundamental flaw that was emphasized is the split/reduced attention of educators in the hybrid framework and accordingly, their inability to support both groups of students (in-person and virtual) effectively. Educators, students, and families strongly emphasized that the hybrid model should not be a teaching and learning option. Participants shared that implementation of this model disrupts learning and creates learning gaps (e.g., reduces student motivation and engagement), negatively impacts students' social skills, as well as student-teacher and peer relationships, and fosters heightened mental health issues (e.g., stress; anxiety; depression).

Wellbeing

Educators and families reported that the virtual model of teaching and learning negatively impacted their families' wellbeing. Among the impacts were increased stress, anxiety, depression, and fatigue; damaged family relationship/increased conflict in the home; and demanding schedules. Participants also reported a decline in their physical wellbeing (e.g., decreased movement/activity, deteriorating eyesight,

headaches/migraines, muscle aches, sleep disturbances). In addition to a decline in their own physical wellbeing, educators shared concerns about the physical wellbeing of their students (e.g., reduced physical movement/exercise; decreased access to food/healthy diet). The decline in students' physical wellbeing was reinforced by student and family reports of their children's experiences. Students and families additionally emphasized sleep disturbances, increased fatigue, headaches, deteriorating eyesight, and increased aches and pains. Although to a lesser extent, eating disorders was highlighted as well.

Participants consistently indicated a decline in important aspects of their social-emotional, and mental wellbeing. Approximately half of educators reported an increase in anxiety and depression, and shared concerns around the availability of, or access to, the resources required to support their emotional and mental wellbeing. A significant proportion of educators also indicated seeking mental health support, professional services, or counselling to address the demands of virtual teaching.

The trends in responses shared by families about their children's social-emotional and mental wellbeing were very similar to those shared by educators. Their concerns included loneliness, increased sadness and depression, increased emotion-regulation difficulties (e.g., increased agitation and anger), and increased anxiety and stress. Student responses echoed those highlighted by families. Many families indicated concerns around the availability of, or access to, the resources required to support their children's emotional and mental wellbeing. Similar to educators, a significant proportion also indicated seeking mental health support, professional services, or counselling for their children and themselves. Regarding the latter finding, it is important to note that levels of mental distress are on the rise and, moreover, parents are 1.5 times more likely to experience increased mental distress in comparison to non-parents (Pierce et al., 2020). This concern is amplified when we consider that parents contended with the additional stressors associated with supporting their children through virtual learning. In order to harness the healing power of families, so that children's wellbeing is nurtured, the social-emotional and mental wellbeing of families must be supported.

Educators also expressed concerns in relation to their sense of professional wellbeing. More specifically, their motivation to continue teaching, their sense of self-efficacy and their ability to do their work was negatively impacted. This is an important finding, given the impact that educators' professional wellbeing can have on students. This leads to the following question: "How can we support educators' sense of professional wellbeing so that they can thrive and most effectively support their students?"

Privacy

Over half of educators articulated concerns about preserving their own privacy as well that of students and families but the predominant worry among educators was related to students being able to share their feelings, thoughts, experiences and concerns safely and appropriately. Educators additionally expressed concerns around the lack of resources (e.g., information about clear protocols and procedures) required for responding to issues that unexpectedly arise in a virtual environment. It is vital that educators feel prepared to respond to serious issues that may occur. A lower percentage of students and families expressed concerns about preserving their own privacy. For instance, students were worried about being recorded and the video being shared or feeling anxious, as a result of being on camera. Families were worried about others seeing into their home and overhearing conversations. These findings suggest that the virtual learning environment does not foster a sense of emotional safety for some participants. Of note, across the various themes that emerged, the majority of participants shared concerns about students' lack of emotional safety in a virtual environment.

Taken altogether, the findings clearly and strongly indicate that based on their lived experiences, educators, students, and families view virtual models of teaching and learning as negative, with the hybrid model highlighted as fundamentally flawed. Students articulated a strong preference for in-person learning in a physical classroom and the need for face-to-face connections with teachers and peers. Furthermore, none of the participants expressed a preference for virtual learning. Although, there is a small percentage of stakeholders who perceive virtual teaching and learning as a positive experience, it is reasonable to state that this has not been the experience of the

overwhelming majority. In fact, recent research supports the detrimental impact of virtual learning (Goldhaber et al., 2022). For instance, one of the outcomes for students who spent most of their time engaged in virtual learning was the loss of the equivalent of about 50% of a typical school year's math learning. Such findings demonstrate how significant the outcome gaps are for students in virtual learning settings.

The results of the current evaluation are not aligned with the Ontario Ministry of Education's current definition of wellbeing. Instead, the findings suggest that the "cognitive, emotional, social, and physical needs" of stakeholders are not met in a virtual setting and wellbeing is not supported "through equity" or "respect for diverse identities and strengths". Although beyond the scope of the current evaluation, the majority of Grade 9 to 12 students with learning challenges or identified exceptionalities reported that their needs were either not supported or only somewhat supported.

The current evaluation brings together the perspectives and lived experiences of educators, students, and families to shine the light on the fundamental needs and challenges they faced while engaged in virtual teaching and learning. Although the student sample in this evaluation was small, it is important to note that their responses demonstrated the same trends evidenced by educators and families with respect to the various themes (with the exception of privacy as reported by families). The findings clearly indicate that participants were negatively impacted while engaged in virtual teaching and learning, as they contended with novel stressors as well as with heightened stressors in this context.

The excessive stress load had a deleterious effect on student wellbeing and academic engagement and success, educator wellbeing and professional efficacy, as well as the wellbeing of families who provided critical support. It is widely acknowledged that academic success and student wellbeing are intertwined. When educators, students, and families are functioning in a state of excessive stress, it is not surprising that we observe these detrimental trends. Thus, it is critical to strengthen the pillars of wellbeing – by doing so resilience can be enhanced (Davidson, 2022). The mechanism of change is healthy relationships and connections with important others – educators, peers, and

families. To that end, we must focus on supporting the wellbeing of educators, students, and families concurrently. When under excessive stress, educators are not positioned to help co-regulate and support students effectively and students are not set up to learn successfully.

We must listen - the loss of a sense of community was central throughout participants' lived experiences. By amplifying and attending to the voices of educators, students, and families, we can develop a more profound understanding of where the gaps and challenges exist so that we can both reflect meaningfully on how to support the wellbeing of educators, students and families and inspire and support students to thrive academically as well.

REFERENCES

Ahn, J. (2011). Policy, technology, and practice in cyber charter schools: Framing the issues. *Teachers College Record, 113*(1), 1–26.

Antoni, J. (2020; September 18). Disengaged and nearing departure: Students at risk for dropping out in the age of COVID-19. Temple university scholar share: https://doi.org/10.34944/dspace/396

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*, 369–386. https://doi.org/10.1002/pits.20303

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. Psychological Bulletin,117, 497-529.

Borup, J., Graham, C. R., West, R. E., Archambault, L., & Spring, K. J. (2020). Academic communities of engagement: An expansive lens for examining support structures in blended and online learning. *Educational Technology Research and Development, 68*, 807–832. https://doi.org/10.1007/s11423-020-09744-x.

Bradley, B. J., & Greene, A. C. (2013). Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. *Journal of Adolescent Health, 52*, 523–532. https://doi.org/10.1016/j.jadohealth.2013.01.008

Bremner, J. D., Scott, T. M., Delaney, R. C., Southwick, S. M., Mason, J. W., Johnson, D. R.,...Charney, D. S. (1993). Deficits in short-term memory in post-traumatic stress disorder. *American Journal of Psychiatry, 150*(7), 1015-1019.

Canadian Teachers' Federation. (2020). Pandemic research report: Teacher mental health check-in survey. https://vox.ctf-fce.ca/wp-content/ uploads/2020/11/Doc-13-1-Pandemic-Research-Report-Teacher-Mental- Health-Check-in-Survey.pdf

Canadian Teachers' Federation. (2021). National summary report: Canadian teachers responding to Coronavirus (COVID-19) – Pandemic research study. https://files.eric.ed.gov/fulltext/ED610460.pdf

Carroll, J.M., & Yeager, D. (2020, July 15). Stress can lead to student failure. New research offers a path for success. *Education Week*. Retrieved July 16, 2020, from:http://blogs.edweek.org/edweek/ask_a_psychologist/2020/07/stress_can_lead_to_student_failure_new_research_success.html?cmp=eml-enl-eu-new

Chin, C., & Osborne, J. (2008). Students' questions: A potential resource for teaching and learning science. *Studies in Science Education, 44(*1), 1–39. https://doi.org/10.1080/03057260701828101

Cozolino, L. (2013). *The Social neuroscience of education: Optimizing attachment and learning in the classroom*. W. W. Norton.

Davidson, R. (2022). Training your mind: The factors that shape wellbeing. The Best Year 2022 Summit (January 12-21). Accessed on April 27, 2022, from https://www.youtube.com/watch?v=0h-iImxtw2s&t=68s

de Souza Fleith, D. (2000). Teacher and student perceptions of creativity in the classroom environment. *Roeper Review, 22*, 148–153. https://doi.org/10.1080/02783190009554022

Farhadi, B., & Winton, S. (2022). Education in crisis: COVID-19 edition. *Our Schools/Our Selves (winter/spring)*. 5-6.

Fellman, D., Lincke, A., Berge, E., & Jonsson, B. (2020). Predicting visuospatial and verbal working memory by individual differences in e-learning activities. *Frontiers in Education,* 5, 22. https://doi.org/10.3389/feduc.2020.00022

Friedman, C. (2020). Students' major online learning challenges amid the covid-19 pandemic. *Journal of Pedagogical Sociology and Psychology, 1*, 45–52.

Gandhi, Chiu, M., Lam, K., Cairney, J. C., Guttmann, A., & Kurdyak, P. (2016). Mental health service use among children and youth in Ontario: Population-based tends over time. *Canadian Journal of Psychiatry, 61*(2), 119–124. https://doi.org/10.1177/0706743715621254

Gilman, R. & Huebner, S. (2003). A review of life satisfaction research with children and adolescents. *School Psychology Quarterly, 18*(2), 192-205.

Goldhaber, T., Kane, T. J., McEachin, A., Morton, E., Patterson, T. & Staiger, D.O. (2022). The consequences of remote and hybrid instruction during the pandemic. Centre for Education Policy Research: Harvard University.

Goswami, H. (2012). Social relationships and children's subjective wellbeing. *Social Indicators Research, 107*, 575-588.

Graham, C. R., Borup, J., Short, C. R., & Archambault, L. (2019.). K-12 blended teaching: A guide to personalized learning and online integration. EdTech books. https://edtechbooks.org/k12blended

Hasler-Waters, L., Barbour, M. K., & Menchaca, M. P. (2014). The nature of online charter schools: Evolution and emerging concerns. *Educational Technology & Society, 17*, 379–389.

Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine, 40*(2), 218-227.

Kauffman, H. (2015). A review of predictive factors of student success in and satisfaction with online learning. *Research in Learning Technology, 23*. https://doi.org/10.3402/rlt.v23.26507

Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *The American Psychologist, 62*(2), 95–108. https://doi.org/10.1037/0003-066X.62.2.95

Ko, S., & Rossen, S. (2017). *Teaching online: A practical guide* (4th ed.). Routledge.

Lupien, S. J., de Leon, M., de Santi, S., Convit, A., Tarshish, C., Nair, N. P.,...Meaney, M. J. (1998). Cortisol levels during human aging predict hippocampal atrophy and memory deficits. *Nature Neuroscience, 1*(1), 69-73.

Miller, Connolly, P., & Maguire, L. K. (2013). Wellbeing, academic buoyancy and educational achievement in primary school students. *International Journal of Educational Research, 62*, 239–248. https://doi.org/10.1016/j.ijer.2013.05.004

Newland, L. A., Lawler, M. J., Giger, J. T., Roh, S., & Carr, E. R. (2015). Predictors of children's subjective wellbeing in rural communities of the United States. *Child Indicators Research, 8*, 177-198.

Oberle, E., Schonert-Reichl, K. A., & Zumbo, B. D. (2011). Life satisfaction in early adolescence: Personal, neighborhood, school, family, and peer influences*. Journal of Youth and Adolescence, 40*, 889-901.

Ontario Ministry of Education. (2016). Ontario's wellbeing strategy for education: Discussion document. Toronto: Queen's Printer for Ontario. Retrieved from http://www.edu.gov.on.ca/eng/about/wellbeingpdfs_nov2016e/wellbeing_engagement_e.pdf

Ontario Public School Boards' Association (2021). Perceptions of online learning in Ontario during the COVID-19 pandemic: Results of a province-wide survey of parents and community members (November 2021). Retrieved April 29, 2022, from: https://www.opsba.org/wp-content/uploads/2022/02/Final-Provincial-Report-Online-Learning-and-Covid-19-Community-Survey.pdf

Orben, A., Tomova, L., & Blakemore, S. J. (2020). The effects of social deprivation on adolescent development and mental health. *Child and Adolescent Health, 4*(8), 634-640. https://doi.org/10.1016/S2352-4642(20)30186-3

Oviatt, D. R., Graham, C. R., Borup, J., & Davies, R. S. (2016). Online student perceptions of the need for a proximate community of engagement at an independent study program. *Journal of Online Learning Research, 2*, 333–365.

Pierce et al. (2020). Mental health before and during the COVID-19 pandemic: A longitudinal probability sample survey of the UK population. *The Lancet Psychiatry, 7(*10), 883-892.

Shanker, S. G. (2016). *Self-reg: How to help your child (and you) break the stress cycle and successfully engage with life*. Penguin Random House Canada.

SickKids. (2020, June 17). COVID-19: Recommendations for school reopening. Retrieved from covid19-recommendations-for-school-reopening-sickkids-june.pdf

Suldo, S. M., Shaffer, E. J., & Riley, K. N. (2008). A social-cognitive-behavioral model of academic predictors of adolescents' life satisfaction. *School Psychology Quarterly, 23*(1), 56-69.

Tantam, D. (2018). *The interbrain: Embodied connections versus common knowledge*. London: Jessica Kingsley Publishers.

Tawfik, A. A., Shepherd, C. E., Gatewood, J., & Gish-Lieberman, J. J. (2021). First and second order barriers to teaching in K-12 online learning. *TechTrends, 65*(6), 925–938. https://doi.org/10.1007/s11528-021-00648-y

Walters, T., Simkiss, N. J., Snowden, R. J., & Gray, N. S. (2021). Secondary school students' perception of the online teaching experience during COVID-19: The impact on mental wellbeing and specific learning difficulties. *British Journal of Educational Psychology*, e12475–e12475. https://doi.org/10.1111/bjep.12475

West, M. J. (1993). Regionally specific loss of neurons in the aging human hippocampus. *Neurobiology of Aging, 14*(4), 287-293.

West, R. E., Rich, P. J., Shepherd, C. E., Recesso, A., & Hannafin, M. J. (2009). Supporting induction teachers' development using performance-based video evidence. *Journal of Technology and Teacher Education, 17*, 369–391.

Winnicott, D. W. (1965). *The maturational processes and the facilitating environment: Studies in the theory of emotional development*. London: Hogarth Press.