



## Research Article

# Exploring Parent Perceptions of Virtual Learning in School: Learning During a Pandemic

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**Abstract:** In response to the COVID-19 pandemic, many schools were required to shift to virtual learning. Parents and students had to adapt to this sudden change in learning environments and many of their home lives also changed dramatically. Some families faced additional challenges in accessing virtual learning and in balancing their daily lives. The purpose of this study was to explore parent perceptions of virtual learning. Interviews were conducted with 20 parents of students who attended middle or high schools in underserved areas in one Midwestern US state in the summer of 2021. The majority of participants were between 36-45 years of age, and most participants identified as White (55% or  $n = 11$ ), with 30% identifying as Black. Additionally, the majority of participants reported having a college degree (55%,  $n = 11$ ). Nineteen parent participants were female (95%). Constant comparative analysis and emergent coding were used to analyze the data. The findings revealed that virtual learning impacted participants' daily routines, with participants sharing positive and negative aspects of their stress levels and their children's academic performance. Some parents reported less stress due to the flexibility afforded through virtual learning, whereas other parents noted an increase in their stress level as a result of having to assume extra responsibility for their children's school work. In addition, the majority of parents reported that virtual learning negatively impacted their children's mental health. Some parents of students with disabilities reported that their children had positive experiences with virtual learning. Implications for research and practice are discussed.

**Keywords:** virtual learning, parent perceptions, COVID-19, school

## 1. Introduction

### 1.1 Background of the study

Across the United States, 77% of public schools were forced to transition to virtual learning during the COVID-19 pandemic (Berger et al., 2022). In response to this change, teachers and administrators had to create an online school

system in a very short period of time and with limited preparation or training. Parents and students had to adjust to this sudden change in learning environments and their home lives. A recent systematic literature review on the outcomes of virtual learning during the pandemic revealed that extreme learning loss was experienced by many students in K-12 schools (Donnelly & Patrinos, 2021). In particular, students who live in communities with fewer infrastructural supports were disproportionately impacted by virtual learning (Dorn et al., 2020). In addition to the disruption and changes in students' learning routines, many of their social networks ceased to exist. It is well-known that isolation and a lack of social contact may lead to anxiety and depression (Hiremath et al., 2020); virtual learning created such an atmosphere for many individuals. Pressures related to schoolwork and tension from spending countless hours at home, combined with feelings of isolation and limited social interaction, led to a heightened sense of fear, stress, and anxiety for some students (Singh & Singh, 2020).

In addition to the social and academic impact felt by students, virtual learning placed more responsibility on parents, many of whom found themselves trying to balance work obligations while simultaneously supporting their children's learning at home. Particularly, parents in communities with less infrastructural support may face additional challenges in terms of access and assistance. As we continue to examine the impact of virtual learning it is critical that we explore the lived experiences of families from diverse backgrounds.

Due to disruptions in school services as a result of the pandemic, there is a global concern that students with disabilities may be disproportionately affected (World Health Organization, 2020). When most school-related services shifted to an online format, many students with disabilities were left without the support needed to achieve their academic, functional, and social goals. In addition, although many school districts in low-resource communities provided students with devices such as tablets and a data plan, many students with disabilities required adult support to access content using these devices (Herold, 2020). Indeed, access to learning opportunities for students with disabilities has been a recurring issue; the pandemic may have caused them to differentially, and substantially, regress during the past few years (Jones et al., 2020). At the same time, some preliminary research has demonstrated that virtual learning may actually be beneficial for students with disabilities (Park et al., 2022). These variable findings are worthy of further study, as virtual schooling is not going away.

## 1.2 Literature review

Virtual learning continues to be available in some locations as outbreaks of the COVID-19 virus and its variants periodically spike and as school districts consider that remote learning could replace "snow days," other health outbreaks, and the like. Therefore, it is important to identify supports which can help students successfully engage in this type of learning. Although schools have largely shifted back to in-person learning, given the impact of virtual learning on some students, lessons learned from several families offer opportunities to consider their successes as well as their struggles and needs. While little extant research has examined parents' perceptions of virtual learning, the existing research has shown that virtual learning places a heavy burden on parents and often leaves children feeling socially isolated (Churiyah et al., 2020; Dong et al., 2020; Garbe et al., 2020; Lee et al., 2021; Misirli & Ergulec, 2021). However, most of these studies focused on young children (e.g., Dong et al., 2020; Garbe et al., 2020) and countries such as Indonesia (e.g., Churiyah et al., 2020), China (e.g., Dong et al., 2020), and Turkey (e.g., Misirli & Ergulec, 2021). To our knowledge, none of the existing research on the pandemic has examined parents' perspectives about virtual learning in underserved US middle and high school communities where a large percentage of students receive free/reduced lunch. In this study, we extend the literature by exploring these parents' experiences with virtual learning during the COVID-19 pandemic, with a focus on two research questions: How do parents describe the impact of virtual learning on their families? and What are parents' perceptions of their children's virtual educational experiences?

## 2. Methodology

### 2.1 Participants

Twenty-five parents initially indicated an interest in participating in this study. Five individuals did not complete the interview, resulting in 20 participants (See Figure 1). Nineteen participants identified as parents and one person

identified as a grandparent. Because the grandparent served in a parental role for her grandchildren, we use the term ‘parent’ to describe all participants.

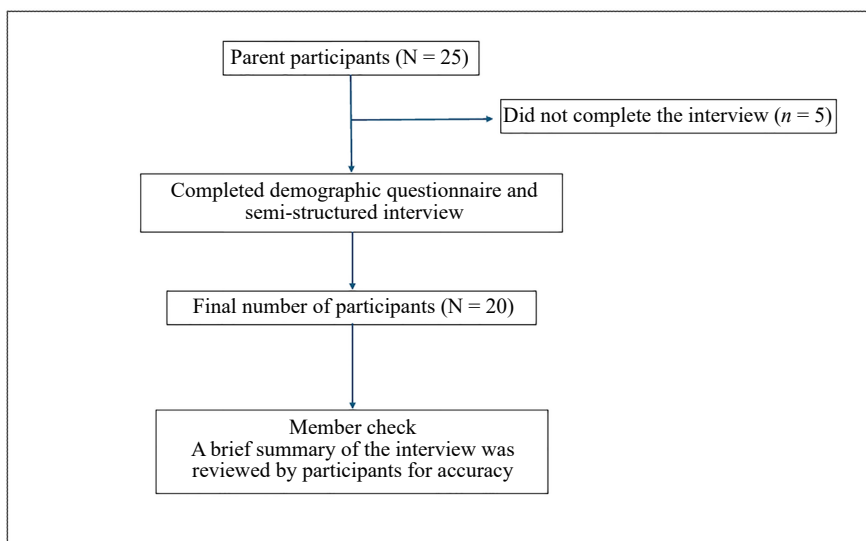


Figure 1. Participant flowchart

This research was ruled exempt by the University Institutional Review Board. Once this approval was secured, participants were recruited as part of a larger research study aimed at examining the feasibility, efficacy, and usability of implementing COVID-19 testing (i.e., saliva-based testing) in five K-12 schools in Illinois where at least 85% of the students received free or reduced lunch (public and private). The schools that participated in this study included one high school, one middle school, and three K-8 schools. Two of these schools were located in suburban areas, two were located in an urban setting, and one was situated in a rural area.

Table 1. Participants’ demographics

Age	<i>n</i>	%	Race/Ethnicity	<i>n</i>	%	Marital status	<i>n</i>	%
25-35	1	5	White	11	55	Married	13	65
36-45	11	55	Black	6	30	Divorced	3	15
46-55	7	35	Hispanic/Latino	2	10	Single	3	15
Older than 55	1	5	Multiracial	1	5	Widowed	1	5
Highest level of education	<i>n</i>	%	Employment status	<i>n</i>	%	Work location	<i>n</i>	%
High school	3	15	Full time	13	65	In person	8	40
Associate’s degree	2	10	Part time	3	15	Remote	4	20
Bachelor’s degree	4	20	Not employed	3	15	Hybrid	3	15
Master’s degree	6	30	No response	1	5	Not employed	3	15
Doctoral degree	1	5	-	-	-	No response	2	10
Other	3	15	-	-	-	-	-	-
No response	1	5	-	-	-	-	-	-

To participate in this study, parents were required to have at least one child who attended one of these five participating schools from January to May 2021. Interviews were conducted in the summer 2021 to ensure that participation did not influence parents' decisions regarding their children's participation in COVID-19 testing during the school year (the focus of the larger study). The majority of participants were between 36-45 years of age, and most participants identified as White (55% or  $n = 11$ ), with 30% identifying as Black. Additionally, the majority of participants reported having a college degree (55%,  $n = 11$ ). Nineteen parent participants were female while one identified as a male (see Table 1 for additional demographics). All participants had a laptop and internet access at home that was either purchased by the family or provided by their school district.

## **2.2 Recruitment**

Participants were recruited using a flyer that was sent through email from each participating school; it also was available through school-affiliated social media and websites. Flyers were translated into Spanish and used where needed. If individuals were interested in the interview study, they contacted the first or fifth author, who shared additional information about the procedures with them. Once a parent agreed to participate and it was confirmed that they met the inclusion criteria (e.g., they had a child who attended one of the five targeted schools from January to May 2021), they were sent a consent form to complete electronically. Upon receipt of the signed consent form, interviews were scheduled over Zoom.

## **2.3 Procedures**

Data were collected using a demographic questionnaire and semi-structured interviews. Both measures were pilot-tested with a parent who was not eligible to participate in the current study, and minor edits to the wording and format were made based on pilot participant feedback.

When scheduling interviews, participants chose the date and time for their Zoom interviews. Research has revealed that in-person, phone, and Zoom interviews generate similar results (Gray et al., 2020; Sturges & Hanrahan, 2004), therefore in an attempt to mitigate the spread of the virus further, we elected to conduct all interviews virtually. At the beginning of each interview, the interviewer introduced herself, and informed participants that their participation was voluntary and that their identity would be handled confidentially when reporting the results. Participants were told that they could refrain from answering any question without negative consequences. No parent withdrew from the study or declined to answer a question. Interviews averaged 22 minutes in length (range = 11-49 minutes).

All interviews were audio-recorded and transcribed using the Zoom transcription feature. To ensure the accuracy of the transcriptions, a graduate student listened to the recordings as she read each transcript. She then made corrections to the transcriptions as needed. A brief summary of the interview was provided to each participant after their interview. They were asked to review it for accuracy, and to make any edits, elaborations, or corrections that they felt were necessary. Nineteen participants reported that they read the summary to check for accuracy; none of them edited their summary. In appreciation for their time, each participant received a \$40 gift card after this step was completed.

## **2.4 Data collection**

**Demographic Questionnaire:** The demographic questionnaire included items related to parents and their children. The parent-focused items included information about the participants' age, marital status, education level, and race. Questions that focused on children included: grades, types of learning (in person, virtual, or hybrid), and special education services.

**Interview Protocol:** The interview protocol was developed based on the literature (Vohra et al., 2021). It was reviewed by several individuals who had expertise in educational research and public health research as well as by administrators at the targeted schools. Minor changes were suggested (e.g., in wording, flow of items), and these were made on the final version. The interview protocol was designed as a conversation between each participant and the interviewer, allowing for follow-up questions to be posed in order to obtain rich descriptions. The interviewer was trained by the first two authors; she then completed a pilot interview with one parent, which was audio recorded. After the lead authors reviewed the pilot interview, the interviewer received feedback from them, in terms of probe questions,

pausing, and acknowledging participant comments, prior to conducting her first interview for this study. See Appendix A for sample interview questions.

## **2.5 Data analysis**

To analyze the transcripts, the research team used constant comparative analysis (Glasser & Strauss, 1967) and emergent coding (Patton, 2002). First, a special education graduate student organized the data by interview questions. Two research team members read each transcript multiple times to familiarize themselves with the data (Tesch, 1990). Then, they individually coded data from three interviews using a line-by-line approach. Each line of data was compared with research team member's coded lines (Creswell, 2003). Each new piece of data (i.e., line from a transcript) was compared with previously coded data to ensure if the data reflected a new idea or if it fits within an existing code. A line of transcripts could have multiple codes if multiple concepts were present. Next, the researchers met to compare codes and resolve any differences (e.g., coding of a transcript line) until a consensus was reached. The researchers then met to compare the codes for redundancy and they created a codebook. With the codebook, the research team returned to the transcripts and independently coded the data again (i.e., the first three interviews). The research team met again to discuss their codes and coded the remaining 17 interviews. Finally, the researchers grouped the codes into categories and organized the categories into themes. To ensure internal homogeneity and external heterogeneity, categories were refined and confirmed by combining categories with overlapping data into a larger category (Braun & Clarke, 2006), which provided a deeper analysis of thematic development. After all transcripts were coded, the team discussed and confirmed the codes, categories, and themes. The coding process was conducted over approximately two months.

## **2.6 Researcher identity**

All research team members had experience working with families and/or in schools. Additionally, all team members had backgrounds in education or the medical field, and they were knowledgeable about school systems and health issues. The fifth and sixth authors, who is bilingual, conducted all interviews for this study, one of which she conducted in Spanish. The research team took care to acknowledge how their experiences in education and medicine influenced the conceptualization and implementation of the study and they used peer de-briefing to address any potential biases in data collection and analysis.

## **2.7 Credibility and trustworthiness**

The authors conducted member checks (sending summaries to participants) and peer debriefing (Brantlinger et al., 2005) to ensure the credibility and trustworthiness of the themes. By conducting member checks, participants were able to contribute to the validity of the findings (Guba & Lincoln, 1989). In addition to the member checks, the research team met weekly to discuss data collection, analysis, and interpretation. Finally, to refine the themes, team members searched for negative examples during data analysis (Brantlinger et al., 2005).

# **3. Results**

The findings are presented according to the themes that were found related to each research question. First, parents' perceptions of the impact of virtual learning on their lives are shared followed by parents' perceptions of their children's educational experiences when conducted in a virtual format. Representative quotes are provided throughout.

## **3.1 Impact of virtual learning on families' lives**

As parents reflected on the impact of virtual learning on their lives, two themes emerged from the data: added stress on families and the transition to virtual learning. Each theme is described next, with quotes to support these topics.

**Added Stress on Families:** One significant impact that virtual learning had on families was added stress. The impact of their child's virtual learning on their work schedule was one major source of stress for some parent participants. For

instance, Candice, the mother of a seventh grader, described this impact when she said, “It was a big impact because I had to change everything around to accommodate and make sure that my child was okay, my child was doing what they were supposed to be doing, and at the same time trying to work myself.” Other participants described a similar impact on their work schedule, with one parent saying, “It impacted mine, because I continued to work in person throughout the pandemic and so, because she [daughter] was remote the majority of the year, I had to adapt my work schedule to go in later, so that I could be home to make sure she got up and logged in.” Nicole described the impact that her child’s hybrid learning had on her schedule. She shared, “It greatly impacted me because he was half day... having to leave work in the middle of my day to pick him up, then get him somewhere where there was an adult because he’s not old enough to stay home by himself.”

Another source of stress for parents was having to monitor their children during virtual learning to ensure they were on task and completing their work. Jessica, who had a 6<sup>th</sup> grader with a disability, shared, “It impacted me because I had to be more involved in his work, because he was younger, and making sure that he’s on task...” Additionally, Stacy, who had two sons (7<sup>th</sup> and 9<sup>th</sup> graders) participating in virtual learning, described a similar experience: “It stopped me from doing a lot of things because I had to make sure that they were doing what they were supposed to be doing. So, it impacted my life a lot... even if I went out to the grocery store, because the schools that they go to, the teachers are on it... if the kids are not on Zoom, they’re hitting your phone. So, it was like I was in school also, it really was, it was like I went back to school.” Finally, some participants described the added financial stress placed on their families as a result of virtual learning. One reason for this stress was that children were home more which meant that families needed to buy more groceries and change their mealtime routines. Another reason for financial stress was shared by one participant who noted that her family spent more on internet services so that it was of better quality and to enable the family to use internet hot spots, thus resulting in a higher monthly bill.

While increased stress related to virtual schooling was mentioned by some participants, having a flexible school schedule as a result of virtual learning made life easier for some other participants. For example, Marissa said, “It made the mornings easier because neither child had to get up and rush around. When we’re in person, everybody’s rushing around. So, in lots of ways, it was actually less stressful.” This increased flexibility benefited both parents and children. Some parents also commented on how virtual learning provided them with more family time. For example, Jamie shared, “I think us all being in the house together for long stretches of time has actually been kind of nice in a way, so middle schoolers and high schoolers are often, you know off with their friends and doing things all the time, so we were able to do some family things... we played games like for months and binge watched whole seasons of shows and stuff and I think that part has been positive.”

The Transition to Virtual Learning: As parents reflected on the impact of virtual learning on their lives, the second theme that emerged from the data was related to the transition to virtual learning. One aspect that made this transition easier for some families was when at least one parent had a flexible job and was able to work from home. For example, Todd, who was the father of a 7<sup>th</sup>-grade son said, “My wife works from home but also had to kind of help them manage the online learning. Because it was a new format it definitely had an impact on her. Thankfully her job has some flexibility, so she was able to work around it, but it did definitely impact her in that way and kind of create some stress in the house.” Similarly, Joy described the benefits of being able to work remotely by sharing, “I was able to work remotely so I didn’t have to rush home from work to make sure she [12<sup>th</sup> grader] was up because I was already at home.”

### **3.2 The impact of virtual learning experiences**

As parents reflected on their children’s virtual learning experiences and considered their options in terms of learning formats (i.e., virtual or in-person), three areas of concern or themes emerged from the data: health and safety, mental health, and academics. Each theme is described next, along with representative quotes, to address the second research question which focused on the parents’ perceptions of their children’s virtual educational experiences.

Health and Safety Concerns: One major factor that participants considered when deciding if and when they would send their child back to in-person learning was the child’s health and safety, specifically related to the risk of contracting the coronavirus. If participants thought their child’s risk of getting sick was relatively low, then they reported feeling more comfortable with them returning to in-person learning. Of particular importance to this decision was the availability of the COVID-19 vaccine. For instance, one parent said, “As we saw vaccinations start to become an option for my two older kids, the risk of contracting it got less, then my confidence in sending them back there

more and more increased.” However, even as vaccines became available some parents were still concerned about their children contracting the virus if they returned to in-person schooling. Jamie described her concerns related to health and safety when she said: “I was really worried that passing in the hallways... I was really worried about that. Once they’re in the classroom being three feet apart, wearing their masks, like okay, that’s pretty good, but once they’re out in the hallways... you probably were in [a] high school hallway at some point, it’s like massive amounts of people and it’s all indoors and all that, so that worried me a bit, the school’s ventilation systems and stuff like that.” Other participants described similar concerns for they worried that despite the health and safety protocols put in place within schools, students would not always follow them, which would lead to an increased risk of contracting the virus.

**Child’s Mental Health:** Parents also considered their children’s mental health when evaluating the pros and cons of virtual schooling, and deciding if they should send their children back to school for in-person learning. Many participants felt that their child’s lack of social interaction was having a negative impact on their mental health and that returning to school would help them. For instance, Jessica, whose 6<sup>th</sup>-grade son had a disability, said, “My biggest concern was I didn’t think that going another year would positively affect him just from a mental standpoint, and... not being able to interact with people, not learning those skills, day-to-day interaction with people.” Other participants, such as Stacy, echoed that concern: “... Interacting with others. That was one of my big, my main concerns. Basically, with them at home, they weren’t, they didn’t, couldn’t do anything, wasn’t [sic] communicating with their friends or anything so that was one of my main reasons for letting them go back.” Similarly, Toni stated, “I feel like my specific individual son needs social interaction and... I would say he’s behind no more than anybody else, but I think that the in-person interaction it’s very important for him.” And, Luisa reported, “I would say there’s less social-emotional learning that’s been happening. There’s some but not, in terms of just that social interaction with people. I think that has been hard.” Many participants felt that the increased isolation was extremely difficult for their children, with one parent sharing, “I think that isolation, weighed, had a significant impact on our kids... there’s very little time for socialization anyway and with having older kids, we don’t have the connections with [other] parents.”

**Academics:** A final factor that parents discussed in relation to their children’s virtual educational experiences, and that they reported considering as they decided if and when they would send their children back to in-person learning, was related to academics. Several parents felt that in-person schooling would be better for their children’s academic needs compared to virtual learning. For example, Nicole shared: “What he needed as a student... the strictly online is not working well for him. He needs in-person instruction... I still was working, and it just wasn’t working well for him to get what he needed as a student. So, I felt it best to send him back to school when they offered it.”

Likewise, Ashley noted that her son was less motivated to do schoolwork during virtual learning. She stated: “They did remote learning for over a year and a half... I saw that they were falling behind and their learning went down, their concentration wasn’t there, their ability to want to do school wasn’t there. It was very, very hard.” Additionally, Alexandra reported that a structured environment and schedule were important to her son’s learning. She said: “He just kind of slacked off. Not being in that school, that classroom environment, and that is the reason why we did send him back the last quarter of last year. Because he just wasn’t doing things and [was] turning things in blank. He needs that structure to stay on top of things.” Many participants shared their concern that because of virtual learning their children would fall behind academically and struggle to adjust once in-person learning resumed. For instance, Nicole commented, “The grading system has been more relaxed, and so I am wondering how that will affect him as we move to prepare for high school.” Similarly, Marissa said, “The bad thing, I think, and for my son, who was in high school, was that the academic rigor wasn’t there at all. So. I’m not sure how much he learned... There were no essays... if he showed up and did a couple of things he got an ‘A.’ His transcript is good but I’m not sure that’s really the purpose of school.”

Overall, participants were incredibly concerned about their children’s academic performance and progress during virtual learning. They noticed negative impacts on their children’s learning and were worried about how their academic performance would be affected once they returned to in-person schooling, and into the future. However, a few participants reported that they and their children had positive experiences with virtual learning. This was especially true for three parents of students who received special education services. For instance, Jessica felt that virtual learning was beneficial for her son because there were fewer distractions at home compared to at school. She shared: “My son has ADHD... From a positive standpoint, there were fewer distractions, and he was able to focus, because he was at home and there weren’t, I mean obviously there were kids online but not being in direct contact with kids I think was a positive for him.” Another parent, Marissa, described virtual learning as being beneficial for her daughter because she

was no longer being pulled out of the classroom for special education services. Marissa reported: “She has an IEP, and so they continued to have the intervention on Zoom so that was actually good, in fact, maybe better because normally she doesn’t like to be pulled out of class. And so, in that regard, she had her special education intervention, and nobody knew... the good thing is that there were fewer disruptions to both children’s classes.” Luisa also reported, “Remote learning was a great thing for him because he has a neurological disability and has an issue with writing. Because everything was online, it allowed him to be more successful writing English language arts, because of the format.” Several other participants also felt that their children were very successful using online learning formats. In fact, one participant shared, “Them being homeschooled by me was an actual benefit to them... educationally for those two it was a significant benefit; they needed the one-on-one.”

## 4. Discussion

In this study, we explored the perceptions of 20 parents who had children who attended schools that served a large percentage of students who received free/reduced lunch during the COVID-19 pandemic. Three main findings emerged from this study that are worthy of further discussion.

### 4.1 *Different levels of stress*

The majority of participants reported that virtual learning impacted their daily routines and created varying levels of stress for different families. Many parents noted that they had to adjust their routines to assist their children with virtual learning, creating a source of stress. Previous research has shown that children’s age played a significant factor in the ease with which virtual learning occurred, with older children needing less adult support to facilitate online learning (Misirli & Ergulec, 2021). The findings from the current study are consistent with previous research, although noteworthy is the fact that all of the youth whose parents participated in this study were middle school and high school age. Several parents of high school age youth reported experiencing less stress and citing positive outcomes from virtual schooling such as increased family time and more focused engagement in learning, while some parents of younger youth (i.e., middle schoolers) noted concerns. Although most older youth require less parent support during virtual learning, many parents did share concerns about their youth falling behind academically and they seemed to feel that the stakes were higher for high school students. The unique concerns across age groups appear to require differential support, and further research is needed in this area.

### 4.2 *Lack of social interaction during virtual learning*

In addition to academic outcomes, most parents were concerned about the lack of social interaction during virtual learning. Research has demonstrated that academic outcomes are linked to social and emotional competence (e.g., Kim & Shin, 2021; Le et al., 2019; Rhoades et al., 2011). Social and emotional learning is defined as competence in identifying and managing emotions, developing healthy attitudes toward self and others, positive goal setting, interpersonal problem solving, maintaining positive relationships with others, and making responsible decisions (Durlak et al., 2011; Kamei & Harriott, 2021). Indeed, social and emotional development and mental health are key issues related to all aspects of healthy development. However, according to a report from the Georgia Health Policy Center (2021), as many as 126,000 (14%) of children (age 2-8) may require mental health services, and 20% of youth under 18 had a diagnosed mental health disorder in the state of Georgia prior to the pandemic.

Exacerbated by the COVID-19 pandemic, it became a real challenge to support and integrate social and emotional development in virtual learning contexts. Like other studies conducted during the pandemic (c.f., Dong et al., 2020; Garbe et al., 2020; Misirli & Ergulec, 2021), parents who participated in the current study reported that their youth struggled socially because they were not able to share the same physical environment with their peers, resulting in decreased opportunities to engage and develop relationships with both peers and teachers. While schools can, and should, address academic learning and also provide opportunities for socialization (Misirli & Ergulec, 2021), this is not always easy.

Research has revealed that schools can play a significant role in social and emotional learning within virtual



contexts, yet educators reported finding it difficult to support these skills when school administrators simply directed them to prioritize social and emotional learning but did not provide guidance or resources. On the other hand, some educators reported fewer challenges facilitating social and emotional learning during virtual schooling, less self-judgment and emotional exhaustion, and more opportunities for social and emotional learning when schools provided both support and guidance, and prioritized social and emotional learning (Zieher et al., 2021). To this end, school and district staff should nurture and support educators, so they have the capacity to facilitate social and emotional learning and support their students, thereby minimizing social isolation and stress during virtual learning.

### **4.3 Students with disabilities**

A few of the participants in the current study had youth with disabilities; interestingly they described several benefits that resulted from virtual learning. These student benefits included fewer distractions and not being marginalized by being pulled out of the classroom to receive special education services. These findings contradict previous research, which reported negative impacts of virtual learning for students with disabilities. For instance, Misirli and Ergulec (2021) reported that in Turkey, parents of students with disabilities found that virtual learning resulted in social isolation, limited engagement, and increased screen time for children while simultaneously placing a heavy burden on parents to support their children's learning. Similarly, Trzcińska-Król (2020) found that virtual learning was stressful for students with disabilities and not conducive learning. More research is needed on this topic to understand the nuances of what works well for which students under what situations.

## **5. Limitations**

As with all studies, there are several limitations to this one that must be noted. First, we were unable to recruit any parent participants who had children in elementary grades. Their stories of successes, stressors, and perceptions related to virtual learning might have been very different compared to parents of middle and high-school-age students. Also, parents who struggled with internet access issues most likely did not volunteer to participate in the study due to these technology challenges. Thus, we are missing their voices. Finally, while 20 parents shared their perceptions with us, we only conducted one interview with each participant and therefore the depth of information gathered was limited, with no assessment of potential long-term effects.

## **6. Implications for practice**

Virtual learning in middle and high schools that are located in under resourced areas is in its early stages. Based on the current study, we suggest that schools prioritize promoting equity in academic achievement, investing in professional development, and supporting parental engagement.

### **6.1 Promoting equity in academic achievement**

Given the challenges associated with virtual learning, there is a need to explore alternative assessment methods such as incorporating more project-based assessments, portfolios, or performance tasks allowing students to demonstrate their understanding and skills in diverse ways. Thus, it is important to provide training and support to teachers on equitable and inclusive strategies for all students to maximize their learning capacities regardless of virtual or in-person learning environments. Furthermore, schools could foster community partnerships to facilitate access to tutoring, mentoring, mental health services, and other supports that contribute to students' academic success and well-being.

### **6.2 Investing in professional development and teacher support**

In addition to supporting teachers with strategies for promoting equity in academic achievement, it is important to support teachers in implementing social and emotional learning strategies to promote students' engagement and

communication with their peers. These strategies can promote positive mental health during virtual learning. Thus, ongoing professional development opportunities should be provided to educators to enhance their pedagogical knowledge and digital literacy skills. These opportunities could result in improvements in teachers' abilities to effectively engage with all students in virtual learning environments. Also, prioritizing mental health support services within schools is essential. For example, providing training to educators on implementing mindfulness and stress reduction techniques in the curriculum, providing mental health resources to students, and fostering a supportive and empathetic school culture that prioritizes student well-being are critical needs.

### 6.3 Supporting parental engagement

While parents play an important role in supporting their children's virtual learning, it is necessary to provide parents with adequate resources and guidance to effectively navigate this new educational landscape. This support could include workshops or online resources that offer tips on creating conducive learning environments at home, managing technology use, and supporting children's emotional well-being during virtual learning. Additionally, it is crucial to address the technology infrastructure necessary across communities to enable virtual learning and to provide families with access to devices and internet connectivity at home that decreases disparities in access among families from under resourced communities. Furthermore, offering individualized technical support for parents and students can help ensure positive engagement during virtual learning.

## 7. Conclusion

While we have learned a lot over the past three years about online learning as an option for schooling when a crisis such as a global pandemic is thrust upon us, we do not yet have longitudinal data to investigate the long-term outcomes of this format of education on students' academic, social, and mental health outcomes. As parents shared some positive outcomes of virtual learning in this and other studies, we should consider how we might better serve students whose unique strengths and needs might make this a more appealing and better format for schooling. Also, virtual learning during the pandemic has provided us with an opportunity to explore this form of schooling as a way to access and teach students who have disabilities, who have medical issues or needs, who live in rural areas, who are struggling with mental health issues, and the like so that they might continue their education. Finally, the findings from this study provide us with the perspectives of parents as they described the impact of virtual learning on their lives as well as their perceptions of their children's educational experiences when school was conducted in a virtual format. While we targeted schools that served a large population of students who received free/reduced lunch as part of a larger study aimed at providing them with access to saliva-based testing, we must be cautious when drawing conclusions about the perceptions of this small sample of parents, including some who had children with disabilities. Additional research will help us extend our understanding of virtual learning, as it is highly unlikely that this format for schooling is going away.

## Conflict of interest

The authors declare no competing financial interest.

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## **Appendix A: sample interview questions**

Have there been any positive or negative impacts on your child's education during the COVID-19 pandemic? Please describe them.

How, if at all, has having your child participate in virtual or hybrid learning impacted your daily routines?

How, if at all, has having your child participate in virtual or hybrid learning impacted your financial situation?

When you needed to make a decision to send your child back to in-person learning at school or continue with remote learning, did your child's age play a part? Why or why not?

Overall, what is/was your biggest concern in making the decision to send your child back to school?