

# When school bells last rung: New Jersey schools and the reaction to COVID-19

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# Abstract

This study was an examination of the immediate effects of remote learning during the COVID-19 shutdown in New Jersey during Spring 2020. This mixed methods study relied on survey data capturing the experiences, difficulties, and successes of 708 New Jersey public school educators during the first few weeks of the school closures. These educators were teachers, administrators, school librarians, and other school personnel. The disruptions of COVID-19 will leave indelible changes on education in New Jersey and beyond, and this research examines the beginning of these changes. The findings indicate that while educators found support from their administration, they also encountered a spectrum of difficulties relating to the absence of face-to-face contact with students, in addition to success in coping with the situation as well as some success that surpassed their experiences of schooling before the shutdown.

Keywords COVID · New Jersey · Digital divide

# **1** Introduction

In this research project we examined the effects of the precipitous move to remote instruction in New Jersey public schools caused by the COVID-19 virus. On March 18, 2020 all public K-12 schools in New Jersey were required to stop face-to-face instruction and implement "appropriate home instruction" by an executive order from the governor (State of New Jersey, 2020, para. 3). This closure continued for the 2019–2020 school year for all schools and continued into the 2020–2021 school year for many. To facilitate the move to remote learning, schools employed existing and new online tools and systems throughout the building closures.

Certain features of New Jersey made the state interesting and important to study. First, it was hit hard by the COVID-19 outbreak during the spring of 2020 (Gamlo,

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2020). Secondly, a foundation of New Jersey education is "home rule," a practice, policy, and culture that prioritized the autonomy of each of the 589 school districts in the state (Avery, 2007). These two factors combine to make New Jersey a fascinating study for the problems and successes of the educational responses to COVID-19. By deeply looking at the damage of the shutdown and the struggles and successes of the response, this research can provide insights and a roadmap for practitioners and policy makers going forward. Although we recognize the significance of the student experiences and perspectives and value studies completed by researchers such as Literat (2021), we focused this study on adult educational personnel.

There were two guiding research questions:

- 1. What was the experience of various groups of New Jersey public school educators during the shutdown?
- 2. What have been the difficulties and successes during this time?

This work is an extension on literature and recent studies relating to the digital divide. Zhong (2020) recently reported on the impact that moving toward remote learning due to COVID had in China. He reported that some students walked for hours to find a decent signal to ensure they could do their school work, while others lived in such rural areas with guardians who could not help because they were not technologically savvy. Buzkurt et al. (2020) studied cases across countries and continents and found that the pandemic has exacerbated social injustice, inequity, and the digital divide across the world. (p. 34). This study based on the experiences of New Jersey educators will add to the exiting literature and study of the effects of the pandemic. As the data collection occurred at the beginning of the shutdown, it is a part of the literature on a unique and unprecedented period in education and world history.

#### 2 Literature review

There were two complementary theoretical lenses for this study. We began this work with a consideration of the digital divide. We examined the differences in the experience of educators framed by the socioeconomic levels of their school districts. The poverty level of children in the individual school districts was an important variable in this work. Secondly, the unprecedented disruption and collective trauma of a pandemic, particularly in New Jersey, which was a hot spot during the spring of 2020, encourages a framework applicable to largescale disruptions and disasters. For this we looked at the work of Rebecca Solnit (2010), who studies the success of human resilience during disasters, such as the aftermath of the 1906 San Francisco Earthquake and New Orleans in the wake of Hurricane Katrina. Solnit's theory is that despite the physical and emotional toll that disasters inflict, they can offer opportunities into new ways of being in the world; these are new avenues of community and untapped resources of compassion and human potential. According to Solnit, "It's

There have been many calls to look at this shutdown as an opportunity, particularly in terms of our use of educational technology and beyond. The HundrED and the OECD have called for schools to not simply to look at technology during the COVID-19 shutdown as a short-term fix, but as a vehicle for substantiative change: "The opportunities that digital technologies offer go well beyond a stop-gap solution during the crisis. Digital technology allows us to find entirely new answers to what people learn, how people learn, where people learn, and when they learn" (Petrie et al., 2020, p. 4). Zhao (2020) called for COVID-19 to be a catalyst for widespread change in the 'what', 'how', and 'where' of education. Taberski (2020) challenged us to go beyond technology—to reimagine it, not simply to relocate it:

We cannot continue the exercise of thinking how to better relocate education to online learning platforms. Rather, we need to reimagine education. In doing so, the question we ask becomes, 'How do I construct a successful learning experience for students that transcends online, hybrid, or in-person contexts?' Reimagining education requires us to examine the paradigm we use as the starting point for our conversation. (p.2)

These calls and others reflect the sentiments that Solnit (2010) articulated: that moments of crisis—albeit painful and tragic—give enough clarity from existing systems for fundamental reprioritizations and ways of being in the world.

Nevertheless, there is no escaping the fact that the COVID-19 pandemic and school shutdown has affected schools differently, based on their technological access and affluence—two features that are intimately related and popularly characterized as the "digital divide." The shutdown due to COVID-19 caused both the fear and the actual exacerbation of the achievement gap. Cullinane and Montacute (2020) showed a large discrepancy in both the technology access and time learning between affluent students and their less affluent peers. Moreover, affluent schools that were invested in digital learning environments made the transition to remote learning more quickly than did poorer schools that were not (Petrie et al., 2020). Indeed, adaptation to new technologies by teachers and students has been a fundamental component of success during the COVID-19 shutdown (Education Endowment Foundation, 2020; Global Education Monitoring Report, 2020).

The digital divide has been a major concern in equity for over 20 years. In the mid-1990s, Internet Service Providers (ISPs) such as America Online (AOL) and CompuServe provided the infrastructure for private use of the internet to the public (Guillen & Suarez, 2005). As the use of ISPs began to spread across private, home-use, and the academic sector, the phrase "digital divide" was adopted in both economic and political discussions over peoples' access to the internet and educational computing (Robinson et al., 2003). However, the "digital divide"–the disparity between individuals who maintain knowledge of and access to technology and those who do not–still endures (Moore et al., 2018). Smith (2015) found that a majority of the research on the digital divide has centered on the use and acquisition of technological resources and devices by the general United States population. As children in American classrooms use technology daily, access to technology and

digital resources has become critical for their academic success (Darling-Hammond et al., 2014).

In a compulsory survey issued to New Jersey's public and charter schools in June 2020 by the New Jersey Department of Education, results found that 231,176 students of the approximately 1.4 million K-12 pupils in the Garden State lacked access to a device and the connectivity tools to access educational resources online (New Jersey Department of Education, 2020a). When schools were closed at the onset of the COVID-19 pandemic in March 2020, New Jersey educators and students quickly adopted any available technologies such as smartphones, shared laptops, and tablets to adapt to emergency remote instruction. However, as the pandemic continued and many schools in New Jersey remained closed for the 2020 academic year, temporary adoptions of technology such as smartphones were no longer feasible for students to access educational content reliably (Sitrin, 2020). According to data from the Pew Research Center (Anderson & Kumar, 2019), lower-income Americans have diminished levels of technology adoption, which makes individuals more reliant on smartphones for access to the Internet (Anderson & Kumar, 2019). "Smartphone-dependent" internet consumers primarily include lower-income individuals and minorities that tend to avoid tasks that are generally reserved for devices with larger screens such as a desktop or tablet (Anderson & Kumar, 2019). Task-avoidance is an inherent problem resulting from the inequities of the digital divide, which not only occurs in lower-income populations, but only further widens the "homework gap" for students who struggle to complete academic assignments on smaller screens and results in educational achievements gaps (Moore et al., 2018).

The effect of income on internet adoption and internet-capable devices is also consistent with other barriers for adoption, such as racial and ethnic markers. Perrin and Turner (2019) found that more than 80% of Caucasians own a desktop computer in comparison to 58% African American and 57% Hispanic. Mobile devices play a larger role in racially and ethnically diverse homes in accessing the Internet, as 23% of African Americans and 25% of Hispanics are "smartphone-only" households, and do not have any broadband internet service (Perrin & Turner, 2019). As racial and ethnic minorities tend to be overrepresented in lower-income households (Smith, 2010), diverse students from low-income households lack access to resources to be able to experience instructional activities and leverage educational resources fully while being compelled to complete class work online during emergency remote instruction related to the COVID-19 pandemic in the 2020 academic year (Sitrin, 2020).

In New Jersey approximately 882,000 individuals or 9.2% of the population live in poverty (United States Census Bureau, 2019a). To address the need to supply devices and internet connectivity pertaining to the digital divide and prevent further academic achievement gaps among lower income populations and ethnic and racial minorities, the New Jersey Department of Education (NJDOE) addressed priority districts based on demographic data as well as indicated need from the 2020 survey results (New Jersey Department of Education, 2020b). With the help of the United States Department of Education's Coronavirus Relief Fund (CRF) funds in tandem with the Coronavirus Aid, Relief, and Economic Security (CARES) Act Elementary and Secondary School Emergency Relief funds, the NJDOE applied emergency grant funds

to acquire and distribute technological resources and internet connectivity for areas with the highest need in July 2020 (United States Department of Education, 2021a, 2021b). Local education leaders and stakeholders recognized the prevalence of hybrid and remote instruction was to retain an expressive role in students' education in the 2020–2021 academic year, and prioritizing students who would otherwise lack access to the internet or learning device remained an equity initiative for the NJDOE and districts throughout the Garden State to further prevent academic achievement gaps from occurring (New Jersey Department of Education, 2020b).

Teacher frustration and burnout were exacerbated and provoked by the Covid pandemic. According to Anderson et al. (2021), the teaching profession in the United States has been suffering from widespread teacher dissatisfaction and disengagement for many years. Declines are being seen in teacher preparation programs in the United States worsened the shortage of teachers in almost every state (Anderson et al., 2021). A 2014 Gallup poll reported nearly half of US teachers were actively looking for a different job or watching for opportunities to change professions. In a 2017 Educator Quality of Work Life Survey (American Federation of Teachers, 2017), 61% of educators reported their work was "always" or "often" stressful. Despite the critical responsibility of teachers in nurturing children's learning and social–emotional well-being, reducing teacher burnout continues to be a considerable challenge in education.

Responses to the Covid-19 pandemic have created a lengthy list of additional stressors for teachers. The pandemic dislocated teachers and school communities across the globe. Within a matter of days, teachers were forced to pivot and shift their instruction and curriculum to remote learning and somehow connect with students virtually. Many school districts implemented alternative teaching approaches such as socially distanced classrooms, hybrid teaching, or complete remote instruction. Consequently, the demands on teachers, already overworked and stressed, grew exponentially. The sudden closure of schools during COVID-19 left many teachers uncertain about their role, unable to use technology effectively to communicate and teach, and unprepared for remote learning. According to Klapproth et al. (2020), teachers struggled to keep their relationships with their students and missed advice and support from their schools.

Pressley (2021) found significant predictors for teacher burnout: anxiety, current teaching anxiety, anxiety about communication with parents, and problems with administrative support. Pressley concluded, "With limited research available on the impact of COVID-19 on teaching, the current findings elucidate which stressors are most proximal to burnout, and thus, what areas schools, districts, and researchers need to attend to in order to maintain the critical teaching workforce" (p. 3).

## 3 Method

To answers our research questions, we chose to pursue grounded theory for the qualitative methodology of this study. Moore et al. (2009) noted the proclivity of qualitative researchers to use grounded theory, "Grounded theory is probably the most commonly used qualitative method, surpassing ethnography, and it is used internationally" (p. 1). Grounded theory allows the researcher to examine the experiences of different people and compare their differences and similarities and build into theory (Glaser & Strauss, 1967). Our methods were thoughtful and methodical. We surveyed educators about their experiences through open-ended questions that we analyzed through collaborative qualitative coding. Blair (2015) noted that in qualitative coding the researchers need to consider existing paradigms as well as their own techniques and consider combining the two of them. In that light, we looked at the data to ascertain patterns that can lead to general concepts about it. Grounded theory let us work with the open and exploratory nature of this study (Charmaz, 2008).

#### 3.1 Data collection

We distributed a 23-question survey online, chiefly through social media, from April 19 to May 19, 2020, approximately 1 month after the statewide shift to remote learning. One of the goals was to capture the experiences of educators as the event was happening.

The survey included demographic questions in a Likert scale, questions addressing the administrative support and technological resources during remote teaching, and open-ended questions about the participants' experiences, difficulties, and successes during the shutdown (see Appendix A: Survey Questions). The authors have a combined 90 years in K-12 education and in teacher education and are in constant contact with practicing teachers during the course of their teaching. Developing the survey was an iterative and collaborative process, following the lead of the research questions, theoretical frameworks, and the methods of grounded theory.

The landing point for the survey was a page on our department's website. The web page was shared through our department newsletter which reaches slightly over 16,000 subscribers and includes our alumni and people who have opted into our newsletter through our website, presentations, and exhibitions at conferences. A link to the page was also shared on Facebook, both organically and through paid promotion. It was promoted in New Jersey among educators with interests in various educational organizations and with occupations in education.

There were 832 surveys completed between April 19 and May 19, 2020. When we filtered out educators who were not in New Jersey and those who worked for private or charter schools, we had 708 useable surveys from New Jersey public school educators. We applied both statistical and qualitative methods to the data analysis. We correlated poverty data for the individual school districts with responses to specific Likert items.

#### 3.2 Sample

The sample was primary collected through social media solicitation and focused on a variety K-12 school personnel in New Jersey. The participants were New Jersey public school educators in a variety of roles—administrators, librarians, other school personnel, and teachers (see Table 1).

Table 1         Participant Roles	Role	# of respondents
	Administrator	35
	Librarian	19
	Other	99
	Teacher	555

n = 708

The "Other" category encompassed roles such as instructional coach, speech therapist, instructional assistant, director of human resources, and child study team member.

Though convenience sampling was used, there was a correlation between the counties where participants worked and the county populations, r(19)=0.831, p=0.000003 (see Table 2).

County	Participants by county	Response (%)	Population 2018 <sup>a</sup>	State popula- tion (%)
Atlantic	15	2%	265,429	3%
Bergen	57	9%	936,692	11%
Burlington	28	4%	445,384	5%
Camden	28	4%	507,078	6%
Cape May	7	1%	92,560	1%
Cumberlad	14	2%	150,972	2%
Essex	59	9%	799,767	9%
Gloucester	21	3%	291,408	3%
Hudson	53	8%	676,061	8%
Hunterdon	15	2%	124,714	1%
Mercer	21	3%	369,811	4%
Middlesex	61	10%	829,685	9%
Monmouth	44	7%	621,354	7%
Morris	33	5%	494,228	6%
Ocean	31	5%	601,651	7%
Passaic	29	5%	503,310	6%
Salem	4	1%	62,607	1%
Somerset	26	4%	331,164	4%
Sussex	51	8%	140,799	2%
Union	30	5%	558,067	6%
Warren	5	1%	105,779	1%
Total	632		8,908,520	

Table 2	Participants	and New	Jersey	Counties

<sup>a</sup>New Jersey Department of Labor, 2018

Table 3Child Poverty Levels ofParticipants' School Districts	Range	Min	Max	Median	Mean	Std. deviation
	39.37%	1.41%	40.78%	8.98%	12.0998%	9.00286%
	n = 598					

#### 3.3 Data analysis

For the quantitative data two notable tools were used. First, we developed a measure for the poverty levels of each school district by using the Small Area and Income Poverty Estimates (SAIPE) (United States Census Bureau, 2019b). The SAIPE data contained an estimate of the number of relevant children 5 to 17 years old in poverty who are related to the householder in every school district in the United States as well as the estimated population of children ages 5–17 in those districts. The percent of children in poverty for each district was based on this ratio (see Table 3). The other notable quantitative tool we used was Spearman's Rho to measure correlation between the participant's sense of administrative support and the poverty level of the school district. Spearman's Rho is appropriate when using ordinal data such as from Likert scales (de Winter et al., 2016).

We employed a collaborative qualitative coding strategy for the three open-ended questions. For the question asking participants to describe their experiences, we employed a method derived from grounded theory (Charmaz, 2008). Grounded theory let us work with the open and exploratory nature of this broader question. Two coders collaboratively open-coded and refined their analysis to axial codes, then the team met, discussed these codes, and developed a final set of theoretical codes. For the more targeted question on difficulties and successes, we used a different coding method. A lead coder developed a codebook, and three other coders reviewed the responses with the codebook. Finally, we met, discussed, and synthesized the codes into four themes: (a) permeating sense of frustration, (b) difficulties connecting to students, (c) the stress on existing systems, and (d) situational and absolute successes during remote learning.

# 4 Findings

### 4.1 Administration support

The leading Likert question addressed the experiences of educators regarding administration support. Participants were asked to rank "How much would you agree with this statement: 'The administration successfully supports students, teachers, and parents during the shutdown?'" Overall, 78% of educators either agreed or strongly agreed that the administration successfully supported students, teachers, and parents during the shutdown. The sense of support was not universal, to be sure. Though only 10.58% of the participants disagree or strongly disagree with the statement that "The administration successfully supports students, teachers, and parents during the shutdown.

during the shutdown," a trending code in the open-ended responses was frustration by changing or seemingly counterproductive mandates by their administrations.

We associated 589 participants' school districts with their child poverty levels from SAIPE. The mean for the group of participants was 12.1% and the mean for all districts in the state is 12.5% (U.S. Census Bureau, 2019b). There was a weak inverse correlation between the poverty rate of children in the participant's district and the participant's sense of support by the administration,  $r_s$  (457)=-0.137, p=0.003. The strong sense of administrative support was shared consistently despite the poverty levels of the districts.

#### 4.2 Access to technological resources before and during the shutdown

We examined the educators' sense of technological resources before and during the shutdown. Interestingly, a greater percentage of participants agreed or strongly agreed that their students had the technological resources to be successful *during* the shutdown (65.36%, n=511) than *before* the shutdown (41.52%, n=513), as shown in Fig. 1.

These questions on student resources were of particular interest when correlated to poverty levels. We calculated the median rate of childhood poverty for the districts of participants who answered both Likert questions relating to the availability of technological resources before and during the shutdown. Only 20% of educators from districts with higher poverty levels agreed or strongly agreed that their students had the technological resources to be successful *before* the shutdown (see Table 4).



Fig.1 Responses to "Students had Technological Resources to be Successful Before and During the Shutdown"

	,		0 0			
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Total
Above median poverty level	10	36	4	86	53	225
	4%	16%	18%	38%	24%	100%
Below or at median poverty level	55	88	35	40	8	226
	24%	39%	15%	18%	4%	100%
All	65	124	75	126	61	451
	14%	27%	17%	28%	14%	100%

**Table 4** Results by Poverty Level: How Much Would You Agree with This Statement? My Students Had

 the Technological Resources at Home to be Successful Before the Shutdown

However, that same group of educators from higher poverty districts agreed or strongly agreed at 56% that their students had the technological resources to be successful *during* the shutdown (see Table 5).

For the qualitative analysis we coded the responses to the open ended questions:

Can you describe your experiences educating students who are home during the shutdown?

- What are your biggest difficulties during the shutdown?
- What are your biggest successes during the shutdown?

There were 871 open codes that were then synthesized into these 37 axial codes, spanning four categories: experience, difficulty, success, and absolute success.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Total
Above median poverty level	32	94	29	50	20	225
	14%	94%	13%	22%	9%	100%
Below or at median pov- erty level	73	98	31	20	4	226
	32%	43%	14%	9%	2%	100%
All	105	192	60	70	24	451
	23%	43%	17%	16%	5%	100%

 Table 5
 Results by Poverty Level: How Much Would You Agree With This Statement? My Students had the Technological Resources at Home to be Successful during the Shutdown

## 5 List of axial codes:

experience: frustration.

experience: technical problems.

experience: parents' involvement extremely important when present or missing.

experience: difficulty connecting.

experience: time, effort, emotional strain.

experience: hard managing own family and work.

experience: strain on existing systems.

experience: students at risk, at worse risk.

difficulty: access.

difficulty: administration.

difficulty: assessment and feedback.

difficulty: change.

difficulty: connecting with students.

difficulty: Covid-related difficulties.

difficulty: educator finding time.

difficulty: engaging students.

difficulty: incomplete work.

difficulty: individual needs.

difficulty: missing f2f (face-to-face) interactions.

difficulty: missing resources.

difficulty: parent involvement.

difficulty: planning.

difficulty: student motivation.

difficulty: student self-management.

difficulty: students with special needs.

difficulty: technology.

difficulty: unique.

difficulty: work/life balance.

situational success: approaching normal.

situational success: parent engagement.

situational success: transition online.

absolute success: better student performance and interaction / new environment.

absolute success: better student performance of under achievers.

absolute success: collaboration and community.

absolute success: connecting to students, parents, and families.

absolute success: improving professional practice or recognition.

absolute success: more time with family.

The discussion is derived from further examining the frequencies, context, sources, and relationships among these codes.

# 6 Discussion

The leading sentiment among educators was an affective one—expressing the frustration during the precipitous shift to remote learning. Educators were stressed. Difficulties to connect and engage with students remotely were the leading causes of stress. Considering the documented prevalence of stress and burnout in teachers before a global pandemic, this is not surprising (Anderson et al., 2021). Additionally, educators emphasized the anxiety associated with meeting the needs of their students and their families simultaneously. Another significant factor was the amount of time to prepare and communicate in a new remote environment. A fourth-grade teacher from a suburban school captured many of the issues described by the participants:

It has been the most difficult, most stressful and tiring thing that I've ever done. I don't enjoy it. It's frustrating trying to help kids with tech issues when you have no idea what's going on with their Chromebooks. Students had death in family, parents lost jobs, and I still had to hold them accountable for 'work.' It's heartbreaking to treat teaching as normal when we're in a pandemic. It's affecting everyone. Some teachers are understanding, others run their virtual classrooms like it's 'business as usual.' It's frustrating for my own kids to be disciplined by a teacher for moving from one location of the house to another one to be closer to the router.

This correlates with Klapproth et al. (2020) whose research found that during COVID teachers struggled to keep their relationships with their students and colleagues.

It was a sense of frustration of ineffectualness to help students during this crisis. The participants frequently referred to the loss of personal interactions and one-to-one contact. A sixth grade English language arts and social studies teacher described her lack of connection with students: "My experience has been 'detached'... as I don't have connections with some students who learn best by one-on-one support, and I don't feel as if I have my finger on the pulse of the students during learning." An elementary teacher from a high poverty district also expressed frustration with the loss of personal student interaction, "No direct contact. I run a very personality driven classroom. My personality is dimmed by our means of communications."

A related theme was the difficulties encountered when connecting remotely to students. There were several reasons that participants gave for this. Many of the participants expressed disappointment with the students for not attending class or doing their work. An elementary music teacher explained this issue of students not doing or handing in their work: "Even though we're using the same digital platforms we've used all year, students are not checking for their work or are ignoring their assignments because they have so many." Additionally, another leading problem was the failures of existing and new technologies' capability to recreate or continue with the curriculum as planned. A kindergarten teacher expressed the time and frustration of providing curriculum remotely:

Finally, the lack of training and preparation of both students and teachers was a related problem of the disconnect with the students. An elementary teacher recognized the lack of technology training for students: "My kids lack of experience using the tech. We do not have 1–1 ratio for technology in our school. Kids never access these resources at home. There has been a huge learning curve." Another elementary teacher added about the lack of teacher training, "Teachers nor parents have had no prior training for this type of sudden change. The biggest difficulty for me was not having the hands-on training and being expected to do things we were never taught how to do."

Many teachers noted the effort, time, and technology needed to teach remotely as a source of emotional strain on the participants. Teachers were doing more and more for less and less. A first-grade reading teacher reported, "Balancing time is difficult and the steep learning curve as we master various computer platforms and programs to build and strengthen our elementary program." Other teachers recognized the amount of time needed took a toll on their schedules and stress levels. One middle school science teacher explained the frustration: "The biggest challenge I've had is managing my schedule. I find myself working late into the evening most days. It's become impossible for me to just 'turn it off' and it's taking a toll on me." An elementary teacher succinctly described the initial remote experience as "absolutely exhausting."

Another salient theme in the open-ended responses was the stress on existing systems. The pandemic revealed and worsened problems that already existed in education. These were coded into three broad concerns: access to technology, vulnerable students, and the role of parents.

A prime concern was for students who did not have access to the technology. Though the Likert item revealed that participants felt that students had better access to technological resources to be successful after the shutdown than before, the problem of access was recurring in the open-ended responses. Anderson and Kumar (2019) articulate the problems of the digital divide in the pre-pandemic U.S. educational systems. The qualitative responses more closely reflected the pre-Covid concerns. Several participants responded positively in the open-ended responses that things were working well because they worked in affluent districts where access was not a concern. Several participants lamented that their districts were without existing 1:1 programs and that gearing up now was not happening fast enough. Others noted that Internet access and the presence of a device were not sufficient. That sentiment was expressed by a middle school teacher from an urban district: "Many of our students don't have equitable access to resources in general but specifically technology resources." This is consistent with Moore et al. (2018) whose research describes the disparities related to poverty that are not specifically a digital device but still affect education. Some

students are sharing devices with parents and siblings. Others only have mobile device. Another teacher noted that the "biggest challenges have been getting the devices into student hands." There is a subtle and powerful distinction between the Likert item and the analysis of the open-ended responses and, combined, they draw a distinct picture: students may have the raw resources to be successful, but the implementation and usage can be inadequate.

Perhaps the most disturbing theme in responses was the ineffectual education of students who were already at risk, specifically, students with special needs and English language learners (ELLs). This disproportionate effects of the pandemic on the education of students with special needs has been documented by Toquero (2021). Many participants noted that students who had been successful in school were continuing to be successful remotely. Several participants overtly pointed out that this shutdown was exacerbating the existing gaps in student success. Consistently, the responses referring to special education and ELLs described dramatic problems. An elementary special education teacher in an urban elementary school wrote:

I have had limited communication with my students. I don't feel as a special education teacher that their needs are really being met. The work is not modified the way it should be. Packets of work going home are not enough. The kids are missing out on so much socialization and interaction. It saddens me.

A high school math and science teacher who also teaches advanced placement (AP) classes expressed concern, "Students with special needs (IEP/504) and ELL are not receiving the supports needed to be successful in many cases." The shutdown had a disproportionately damaging effect on students who were already vulnerable; however, there were noteworthy exceptions that will be described later.

Another existing system that was tested was the support of parents and family. In some cases, positive parental involvement compensated for the challenges in remote learning, and in other cases participants expressed disappointment and placed blame on the inactivity of parents. This finding is a complement to the findings of Garbe et al. (2020) who found that while parents were generally satisfied with the decision to shut down the physical school, they had difficulty navigating the logistics of parenting an online student. In research on teachers and parents, ElSaheli-Elhage (2021) found both groups to be unprepared for the shift to remote learning. One quote that is representative of the importance of parents was from a middle school math teacher: "Getting students to log in and do work by due dates has been a problem. Had to call home several times. Even that did not help for a few because some parents would not return calls." Though the chief concern was an inability to connect with parents, some also empathized with the plight of parents during this time. One middle school teacher noted, "Every day I hear that they are frustrated that they cannot help their children with the classes. They are tired." Moreover, a sentiment in numerous participants was the difficulties that they themselves were experiencing as parents and teachers, balancing their work and their personal lives. A middle school language arts teacher expressed it this way:

One of the biggest difficulties is trying to balance being an educator, grad student, and parent throughout the day. I am homeschooling my preschool child, so he does not fall behind, which is a curriculum I have no prior experience with. I also have to feed, bathe, and keep him entertained while I work. My husband is an essential worker, so I am alone during the day. Many of my students, who were relatively good students beforehand, are now failing due to the fact that they won't complete the online work. Even with reaching out weekly to parents and students, many choose not to respond and are missing numerous assignments.

The importance of parental involvement is also highlighted by its presence. The success of teachers reaching out and collaborating with parents was a notable theme. There were expressions of accomplishment or relief based on the connection to a parent or family member. This response is from an elementary school teacher in an affluent school district: "Most of my students have been very good about completing assignments in a timely manner and the majority of parents have responded when I have had to reach out." All of the successes with parents were in the elementary and preschool grades.

Most significantly, in the final coding, two types of successes emerged from the participants: situational success and absolute success. Situational successes were those positive sentiments about aspects of education under the stressful circumstances, relative to remote learning and the building shutdowns. Many of these reported situational successes were getting students engaged, having students submit work, or getting them connected with their technology. All codes of situational success indicated that the remote experience was approaching a level of normalcy. Absolute successes, on the other hand, went beyond the situation to include successes that were an improvement in the pre-COVID-19 educational environment. Here, with the absolute successes, is where we can start to unlock long-term benefits after the experience of the pandemic.

Overall, the leading characteristic associated with positive teaching experiences was the establishment of routines. Classroom teachers who described success in their work during the shutdown almost uniformly ascribed it to the use of daily and weekly routines. Rogers's (2021) ethnographic study of pandemic pedagogy found the recurring benefits of keeping students organized as a key instructional practice. Some routines were new to remote learning and others were transferred from their normal, face-to-face teaching. Yet, all of them acknowledged the constraints and affordances of the new normal. Many attributed weekly routines involving the blend of synchronous and asynchronous work. Others had systems for the use of the learning management system (LMS). The importance of routines crossed grade levels and content. For example, a physics teacher in an urban high school described her routine this way:

I am posting daily assignments to our LMS, each assignment has the date in the title. I send out weekly announcements explaining that week's work. I hold a Google Meet every day, every period, for students to attend and ask questions. A pre-K teacher in an urban district described her routine: "I use a Google Site to post remote learning activities. I use multiple communication tools to keep in touch with parents and families. I conduct daily recorded videos and weekly Google Meets with students." An urban elementary teacher acknowledged that consistency has been key in having students complete their work and that consistency was based on "getting a routine." Across grades and subjects, the use of routines that work with the limits of tools of remote learning and with an awareness of their students and subject were reported as tools for success.

There were noticeable and important reports of absolute success, when the education of students was significantly better that it was before the shutdown. Of the 503 responses, 72 of them reported some form of an absolute success. This correlates to Huber and Helm's (2020) findings from Europe, who found 1/3 of students reporting a high level of learning during the early months of the pandemic shutdown. These were descriptions of better academic performance because of the online environment, especially the growth of students who were previously under-achieving and improved professional practice, including a greater sense of collaboration and community and engagement with parents and families. These successes during a time of dramatic change and in an overall challenging and detrimental environment offer glimpses of better ways or working and being.

There were several consistent stories of better performing students. The new online environment seemed to be attuned to particular learners, specifically, those who were not thriving in school before the shutdown because of social pressures. There were numerous participants who described students who had previously been struggling. This description from a middle school social studies teacher is insightful:

Perhaps because of less distractions, not worrying about what others think, or whatever the reason, they feel more comfortable at home working remotely. One student in particular, a cut-up who tried to entertain everyone, but also has learning difficulties he tries to hide from others, [and] who rarely turned in completed projects or showed effort in anything, has made tremendous progress and is doing exemplary work. He told me that apart from missing his friends and his teachers, he would love to go to school this way because he can be himself and doesn't have to worry about anyone finding out about his difficulties and issues. He said I helped him find himself and encouraged him to realize that he was smart, capable, and worth it.

Also, there are logistical and self-management benefits to working online that several participants described. A high school English teacher highlighted this:

Some students are absolutely thriving with digital learning. Having everything posted in the same place has been helping some students with organization, and I have actually found their participation in online discussions to have increased dramatically compared to their participation in the classroom. Participants noted that some students who previously struggled are participating more and communicating better with teachers.

Participants also reported improvements in their professional growth. Some participants described growing innovation in their practice, learning new technologies, bonding better with students and their families, and experiencing a greater sense of community and collaboration. In a similar vein Saboowala and Manghirmalani-Mishra (2020) found that teachers in India had a positive view of blended learning and could see it as part of their professional growth.

Increased innovations in their practice were often directly connected to the use of educational technology, though not always. Specific comments included "finding new programs to bring to my students," "conquering virtual counseling sessions," and "creating an online office." There were also comments about broader improvements, such as "became more innovative," "learned new things," and "able to make strong connections to families." The terms that reoccurred here embodied a deeper, transformative change: "learning new ways to reach out" and "exploring new resources and new materials to bring to my students." These participants gave strong indications of a substantial growth that went beyond simply adapting to the remote teaching environment or learning technological skills.

Participants also reported new and different ways of collaborating and stronger communities. One high school teacher noted that "teachers are working together and getting creative." Some participants who were more technologically savvy reported the pleasure they got from helping their colleagues. This comment from a middle school teacher captures this sentiment: "[Our district's] teachers have really come together to support our students... they are going above and beyond. I am really proud to be a part of the school right now." The successes run the gamut to advocacy; the biggest success of one suburban administrator has been "Advocacy for students of lower socioeconomic status." This is the type of instinctive unity that disasters can catalyze and that Solnit (2010) chronicled. The support not only encapsulates students. The support of teachers was also noted by a fifth grade teacher, "I find that the general public has been so nice and supportive of teachers and education right now."

Moreover, this bonding extended to parents, students, and families. Reports such as "really getting to know what the home environment is like for my students" and "making strong connections with families" were recurring among those 74 people who reported absolute successes. These connections went beyond a way to deal with the crisis to new ways of connecting with parents, students, and families.

#### 7 Recommendations and conclusions

This research highlights three main recommendations. First, the mental health and welfare of educators and students must take a major role in the immediate and long-term educational policies. The frustration and burnout of educators had already been percolating and was only just accelerated by the pandemic. Collectively, we need to attend to this in significant ways. The nuances of the digital divide are important. While many educators believed their students had the technological resources

during the pandemic, many still described harsh disparities in the open-ended questions. Simply put, a device and a connection do not seem to be enough. Finally, more attention and detail need to be given to the qualities of online learning that students excelled with, even during a global pandemic—chiefly the reduction of social pressures and a sense of independence.

The immediate effects of the COVID-19 school shutdown and precipitous shift to remote learning in the spring of 2020 was an unprecedented and stressful time for New Jersey educators. Though a majority of educators believed that they were supported by their administrations and that students had more technological resources to be successful than before the shutdown, educators felt an overwhelming frustration, particularly with their inability to reach students. Existing educational systems of technology access, the education of students in special education and ELLs, and the important role of parents were stressed. There were some positive outcomes as well. Some students excelled in the remote environment. Moreover, educators reported improvements in their professional practice—innovative and transformative skills, a better sense of community with their colleagues and better connections with their students and their students' families. These benefits were not broadly described, but they were able to occur in this constraining environment when the established order was disrupted. In this way, they can be starting points for exploring better teaching and professional growth.

#### Appendix A survey questions

The survey was given online via Qualtrics survey system. These were the questions.

Your Role.
 Teacher – Librarian- Administrator - Other (space for short answer)

2) What type of school do you work in?Public – Private - Charter

3) Is your school in NJ? Yes - No

4) If "No" is the answer to #3, this question is displayed. In which state do you work in? (Pull down menu with US States)

5) Grade Level (you may choose more than one). Pre-K, Kindergarten, 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th 6) If another choice to "Administrator" is chosen in #1, this question is displayed. SSubject (s) you teach (space for short answer)

7) If "Administrator" is chosen in #1, this question is displayed. Administrative position (space for short answer)

8) School district (There will be no references to specific districts in the published research. We will only use this information to gather demographic information such as the District Factor Group) (space for short answer).

9) Can you describe your experiences educating students who are home during the shutdown? (Large text box for response).

10) What are your biggest difficulties during the shutdown? (Large text box for response).

11) What are your biggest successes during the shutdown? (Large text box for response).

12) What are your concerns about the future of school? (Large text box for response).

13) How much would you agree with this statement? The administration successfully supports students, teachers, and parents during the shutdown.

Strongly agree – Agree - Neither agree nor disagree - Disagree - Strongly disagree

14) How much would you agree with this statement?

15) How much would you agree with this statement? Before the shutdown, I sought learning opportunities and professional development in educational technology independent of my school district.

16) How much would you agree with this statement? Using online educational systems (Google Classroom, Edmodo, Class Dojo, etc.) are worthwhile during the regular school year.

17) If another choice to "Administrator" is chosen in #1, this question is displayed.

Strongly agree - Agree - Neither agree nor disagree - Disagree - Strongly disagree

18) How much would you agree with this statement?

19) If "Administrator" is chosen in #1, this question is displayed.

How much would you agree with this statement? I consider myself a techsavvy administrator

Strongly agree - Agree - Neither agree nor disagree - Disagree - Strongly disagree

20) How much would you agree with this statement? My students had the technological resources at home to be successful before the shutdown. Strongly agree – Agree - Neither agree nor disagree - Disagree - Strongly disa-

Strongly agree - Agree - Neither agree nor disagree - Disagree - Strongly disagree

21) How much would you agree with this statement? My students have the technological resources at home to be successful during the shutdown.

Strongly agree – Agree - Neither agree nor disagree - Disagree - Strongly disagree

22) How many years of experience do you have in education? (space for short answer).

23)What is your highest level of education? Bachelors – Masters - Doctorate

- 24) What field is your highest degree in? (space for short answer).
- 25) Is there anything you would like to add? (Large text box for response).

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