What Changes Remain? Teacher Perspectives on Changes Made to U.S. Schools During the COVID-19 Pandemic

David T. Marshall

Abstract
The COVID-19 pandemic caused a major disruption to the way schools operated. Schools closed for in-person learning as part of a larger effort to slow the spread of the virus, and several changes were implemented to maintain learning. This paper shares findings from four surveys that explored teacher perceptions and experiences during the pandemic. In each survey, participants were asked about the changes that were being in their schools to accommodate the virus. Findings suggest that changes that persist include increased technology use, changes in the structure of schooling, and the extent to which parental involvement is prioritized.

Keywords
COVID-19, teachers, educational technology, learning modalities, parents, education reform

The SARS-CoV-2 (COVID-19) pandemic has drastically changed all facets of life over the past two years, and schooling has been no exception. In the United States, schools closed for in-person instruction in March 2020 (Maranto et al., 2020; Marshall, 2022). In the interim, schools continued to maintain the mission of educating children, albeit under very different conditions. This represented the

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largest, most radical experiment in remote learning that had ever taken place. Teachers were asked to teach in ways in which they were not trained (Marshall et al., 2020) and students were asked to learn in ways that were unfamiliar to most (Carpenter & Dunn, 2020; 2022). Although it was initially hoped that schools would be closed for 2 weeks or a month, American schools remained closed for the remainder of the 2019–2020 school year. Local and state officials had to grapple with decisions regarding how to reopen schools for the 2020–2021 school year, and this varied from one context to another (Marshall & Bradley-Dorsey, 2020). Some schools offered in-person instruction for the entire school year while others remained shuttered for the entire year (Marshall & Bradley-Dorsey, 2022). Almost all schools offered a remote learning option for families that wanted it (Hoofman & Secord, 2021; Marshall & Bradley-Dorsey, 2020).

Throughout this turmoil, schools were still charged with educating America’s students, although this often deviated from pre-pandemic times and varied wildly across policy contexts. Several have posited that this would or could be a moment for great change in schools (e.g., Zhao, 2020). Sir John Daniel’s (2020) well-cited paper on COVID-19’s impact on elementary and secondary education chronicles lessons learned from the spring 2020 transition to remote instruction, including approaches to implementing remote learning, communication with students and parents, and how to handle assessments. Vanourek’s (2020) study of 50 charter school leaders, teachers, and parents on the transition to remote instruction echoed these findings, adding that meeting students’ basic social, emotional, and nutritional needs were the first priority for schools navigating the pandemic. Khanel et al.’s (2021) scoping review of K-12 organizational responses due to COVID-19 suggest that there was great variation in how school leaders negotiated the challenges associated with the pandemic. As of this writing, lessons learned beyond the initial months of remote learning have been largely unexplored in a single paper. This paper aims to answer the question: What changes that have been made in K-12 education during COVID-19 will remain beyond the pandemic?

Methods

To answer this study’s single mixed methods research question, I draw on both quantitative and qualitative data collected from four separate cross-sectional survey administrations. Mixed methods research questions are appropriate when one source of data (quantitative or qualitative) alone would be insufficient (Creswell & Plano Clark, 2011). Qualitative data were necessary, especially at the start of the pandemic when no literature existed that could have guided the development of quantitative items. Quantitative data were necessary as the pandemic evolved to better understand the prevalence of changes made in schools. This study sought to understand the evolution of teacher perceptions of the changes
that were being implemented in schools during the COVID-19 pandemic, and both sources of data were needed to fully understand this.

**Instrumentation**

Between March 2020 and May 2022, four surveys were administered as part of a larger effort to make sense of how the COVID-19 pandemic has impacted K-12 schooling. The initial survey (March–April 2020) probed teacher experiences during the transition to remote instruction when schools closed for in-person instruction. The second and third surveys were conducted during the 2020–2021 school year (January/February 2021 and May/June 2021, respectively). The fourth survey was conducted at the conclusion of the 2021–2022 school year (May 2022). Table 1 provides an overview of the items included in each survey that helped answer this study’s research question.

**First Teacher Survey—Transition to Remote Instruction.** The first administration took place during the transition to remote instruction from March–April 2020 (Marshall et al., 2020; 2022a). A final sample of 328 teachers from 44 states was obtained. Teachers were asked about which aspects of their professional practice were most challenging with schools closed for in-person learning, as well as how prepared they were for delivering instruction remotely. The survey also explored learning modality, included a modified teacher self-efficacy scale, and ended with a series of open-ended items that yielded unusually rich data. Among them was an item that read, “What recommendations do you have for school districts in terms of preparing for events like COVID-19 in the future?” One hundred seventy-three participants responded to the item.

| Table 1. Items Included in Each Survey Administration About COVID-19 Changes in Schools. |
|---------------------------------------------------------------|
| **Survey administration** | **Relevant item(s) included** |
| March–April 2020 | Single open-ended item (qualitative) asking teachers about recommendations they had for school districts facing similar, future crises |
| January–February 2021 | Single open-ended item (qualitative) asking teachers which changes that had been made due to COVID-19 would remain after the pandemic |
| May–June 2021 | Eleven closed-response Likert scale items (quantitative) asking teachers about the likelihood that specific changes would remain after the pandemic, followed by a single open-ended item (qualitative) asking about changes that were not included in the original 11 items |
| May 2022 | Seven closed-response items (quantitative) asking which changes were still being implemented in schools, followed by a single open-ended item (qualitative) asking about changes that were not included in the original seven items |
**Second Teacher Survey—Midway Through a Pandemic Year.** The second survey was administered in January-February 2021—approximately halfway through the 2020–2021 pandemic-altered school year (Marshall et al., 2022b). The survey was administered via Qualtrics to PK-12 teachers in the United States and a final sample of 277 teachers from 42 states and the District of Columbia was obtained. The survey included scales measuring student access to learning materials and technology, teacher self-efficacy, burnout, leadership autonomy, and job satisfaction. A series of items were included inquiring about the learning modality or modalities employed during their school, the extent to which they had to quarantine because of the virus, and teacher morale. The survey concluded with a series of open-ended items. Among them was an item that read, “Think about the changes that have been made in schools as a result of COVID-19. Which of these changes do you think will remain beyond the pandemic?” Two hundred twenty participants responded to the item.

**Third Teacher Survey—End of a Pandemic Year.** The third survey was administered in May–June 2021—the end of the 2020–2021 pandemic-altered school year (Marshall et al., 2022c). A final sample of 302 teachers from 42 states and the District of Columbia was obtained. The survey included items inquiring about learning modality, teacher workload, teacher morale, and future professional plans, and concluded with a pair of open-ended items that asked about important lessons learned as well as how their pedagogy has changed because of teaching during the pandemic. Eleven Likert scale items were included and based on the following prompt: “How likely are the following changes schools implemented during COVID-19 to continue after the pandemic?” Participants were asked to respond on a six-point scale a value of 1 was highly unlikely and a value of 6 was highly likely. The items included: (1) additional cleaning procedures; (2) social distancing; (3) wearing masks; (4) options for students to attend via Zoom (or other video conferencing) when absent; (5) remote learning when weather or other conditions prohibit in-school learning; (6) full-time online learning options for students; (7) one-to-one devices for students; (8) having one or more days per week be asynchronous learning days; (9) continue using a learning management system; (10) have virtual office hours, and (11) increased communication with families. An additional open-ended follow-up prompt was asked: Please describe any other changes that were not listed above that you believe might become permanent fixtures in schools. Eighty-five participants responded to the item.

**Fourth Teacher Survey—End of 2021–2022 School Year.** The fourth and final survey was administered in May 2022 (Marshall et al., 2022d). A final sample of 864 teachers from 49 states was obtained. The survey included items inquiring about teacher morale, mental health, teacher autonomy, and administration support. Participants responded to the following prompt: “Which of the following changes implemented in some schools during the pandemic were present in your school during this school year (2021–
Participants were asked to respond by checking all of the items that applied to their school. The items included: (1) additional cleaning procedures; (2) options for students to attend via Zoom (or other video conferencing) when absent; (3) remote learning when weather or other conditions prohibit in-school learning; (4) one-to-one devices for all students; (5) having one or more days per week be asynchronous learning days; (6) continue to use a learning management system; and (7) increased communication with families. Descriptive statistics were calculated for each item. An additional open-ended follow-up prompt was asked: Please describe any other changes that were not listed above that persisted in your school this year. Two hundred sixty-five participants responded to the item.

Items included in the second, third, and fourth survey administrations were based on the findings from the previous survey(s). The first survey asked participants about recommendations they had for school districts. Approximately half of the responses were speculating about changes that would occur during the pandemic. These responses were collected during the first weeks of the spring 2020 transition to emergency remote instruction. Based on these responses, the second survey explicitly asked an open-ended item about the changes that participants believed would persist beyond the crisis. The third survey’s quantitative, closed-response items were based on the qualitative findings from the second survey. The fourth survey’s items were based on what was learned from the second and third surveys. At the time of the fourth survey’s administration (May 2022), most COVID-19 mitigation efforts had ceased in U.S. schools, so items asking about mask-wearing, social distancing, and other efforts specific to the virus itself were not included.

Participants

For each of the four surveys, a similar methodology was followed. Each survey was administered via Qualtrics using a combination of voluntary and snowball sampling. The survey was shared with the personal networks of teachers, some of whom shared the anonymous link with teachers they knew. An anonymous link was also posted on social media networks including Facebook and Reddit and invited those employed as PK-12 teachers to participate. All four surveys were approved by the Institutional Review Board; no compensation was offered to participants. Table 2 describes the sample obtained for each survey administration.

Data Analysis

Data were initially analyzed separately for each of the four survey administrations. Open-ended responses from the first survey were downloaded from Qualtrics and imported into Excel. Data were coded for themes that emerged across participant responses using open coding (Saldaña, 2016). Coding took place with a colleague. The first round of
coding included a code for participant speculations about changes that would persist beyond the crisis. Additional codes were created for specific changes that participants envisioned would remain. A colleague coded a sample of the responses as well, after which we met to discuss and resolve discrepancies, and generate a final list of findings. Open-ended responses from the second survey administration were analyzed in the same manner using open coding, with the same colleague coding a subset of the responses. The closed-response quantitative items from the third survey administration were analyzed using SPSS version 28. Descriptive statistics including means and standard deviations were calculated for each. The open-ended responses were coded in Excel, similar to the qualitative data collected from the first two survey administrations. There was no codebook created prior to the analysis of the qualitative data from the first two administrations. An a

Table 2. Description of Samples Obtained From Survey Administrations.

| Variable               | Mar/Apr 2020 (%) | Jan/Feb 2021 (%) | May/Jun 2021 (%) | May 2022 (%) |
|------------------------|------------------|------------------|-----------------|--------------|
| Race                   |                  |                  |                 |              |
| African American/Black | 5.4              | 4.6              | 7.9             | 3.8          |
| Asian American         | 0.9              | 1.2              | 1.3             | 1.6          |
| Hispanic/Latina/o      | 1.8              | 5.3              | 4.6             | 3.8          |
| Native American        | 0.0              | 0.4              | 0.0             | 0.2          |
| Pacific Islander/Hawaiian | 0.0           | 0.0              | 0.0             | 0.6          |
| White or Caucasian     | 89.5             | 86.3             | 82.8            | 86.9         |
| More than one race     | 1.3              | 1.9              | 2.6             | 2.3          |
| Gender                 |                  |                  |                 |              |
| Female                 | 83.5             | 81.3             | 79.1            | 88.3         |
| Male                   | 16.5             | 18.3             | 20.2            | 10.8         |
| Other                  | 0.0              | 0.4              | 0.7             | 0.9          |
| School Type            |                  |                  |                 |              |
| Traditional Public School | 79.9         | 80.6             | 76.2            | 83.1         |
| Magnet School          | 2.0              | 2.7              | 3.6             | 3.9          |
| Charter School         | 7.2              | 6.6              | 11.9            | 6.5          |
| Private School         | 10.9             | 10.1             | 8.3             | 6.5          |
| Title I                | 55.6             | 54.0             | 51.1            | 61.8         |
| Geographic Location    |                  |                  |                 |              |
| Rural                  | 25.4             | 18.8             | 16.6            | 14.6         |
| Small Town             | 13.7             | 8.4              | 10.9            | 12.5         |
| Suburban               | 38.3             | 41.5             | 42.7            | 47.9         |
| Urban                  | 22.6             | 31.3             | 29.8            | 25.0         |
| N                      | 328              | 277              | 304             | 864          |
The first three surveys asked teachers to project which changes associated with the COVID-19 pandemic would remain in schools, whereas the final survey asked teachers which changes actually occurred. Three overarching themes emerged across the four survey administrations: (1) changes associated with increased technology; (2) changes in the structure of learning; and (3) strengthened communication with parents. See Table 4 for themes that emerged from open-ended items from the first two survey administrations. Table 5 shares the means and standard deviations from the May/June 2021 survey for the likelihood that certain pandemic-related changes would persist (6-point scale) and percentages from the May 2022 survey administration representing the proportion of participants who reported these changes persisting through the 2021–2022 school year.
Changes Associated with Increased Technology

Findings from the four survey administrations suggest that increased technology use is likely to be the most persistent in K-12 schools beyond the pandemic. These changes include (1) having one-to-one devices for students; (2) incorporating digital learning days; and (3) a continued use of a learning management system (LMS). The teachers who completed the first three surveys almost universally believed that schools would provide one-to-one (1:1) computing devices for students. In the May 2022 survey, participants shared that this change above all else was the most frequently cited item that persisted through the 2021–2022 school year, with 80.56% of participants sharing...
one-to-one devices were made available for students in their school. This was one of two recommendations teachers have shared since the first survey administration at the start of the pandemic.

Similarly, teachers have recommended the inclusion of digital learning days since the start of the pandemic. In the first survey we administered during the spring 2020 transition to remote instruction, participants shared they believed remote learning days would allow instruction to persist when inclement weather or other conditions prohibited teachers and students from physically attending school. They also suggested that there should be remote learning days included in the school calendar so that teachers, students, and parents would know what to do when it was necessary to implement these. As one teacher shared, “having e-days instead of fully canceling school” was now a viable option. Teachers suggested that “students should be graded as usual on these days (provided the school could ensure online access), so that they ‘feel this is important’” (Marshall et al., 2020, p. 49). Although it is unclear how widespread this recommendation has been adopted, there are some early places where this seems to be taking hold. The New York City Department of Education (2022) scheduled Election Day to be a fully remote, asynchronous day in 2021; in previous years, this would have been a day off for students. Greene County Schools in North Carolina (Marshall et al., 2022a) and Hamilton County Schools (2022) in Tennessee have included several remote learning days as a part of their school calendars for the 2021–2022 school year.

During the two survey administrations in the 2020–2021 school year, teachers suggested that learning management systems will continue to be used, which will create new opportunities for personalized learning. In May/June 2021, teachers were asked about the likelihood of LMS persistence, and they reported a mean of 4.70 (6-point scale). As of May 2022, more than half of teachers (54.63%) shared that their schools continued to use an LMS. The use of devices and LMS will also have the tertiary effect of reducing the amount of paper consumption in schools.

Changes in the Structure of Learning

The pandemic potentially created new opportunities for families to exercise choice in how their children learned. Schools closed for in-person learning led many parents to pursue additional educational options for their students. The extent to which this will be the case after COVID-19 should be explored. Most individuals that participated in the studies believed that parents would be able to select an online learning option moving forward and that these would become permanent fixtures beyond the pandemic. Several of the teachers surveyed shared that a subgroup of students performed better than they did prior to the pandemic and even thrived during remote learning. In the May 2022 survey, 57.64% of participants shared that a full-time online public school option existed for students who could enroll in their school. Less than one-third of participants indicated that an online option did not exist and approximately 10% were not sure.
Schools reopened for the 2020–2021 school year utilizing a range of schedules and learning modalities, including several hybrid and alternative schedules. Several school districts provided instruction asynchronously one day per week, often on Wednesdays or Fridays, and provided teachers with additional time for planning lessons and completing paperwork. The teachers surveyed indicated to us that it would have been very difficult to navigate the 2020–2021 school year without having the additional time to plan and work with struggling students. When teachers were surveyed at the conclusion of that year, continuing with asynchronous learning days was seen as the least likely change that would remain in American schools ($M = 1.78$, $SD = 1.22$ on a 6-point scale). However, almost one in five teachers surveyed in May 2022 (18.40%) shared that their school still utilized some form of asynchronous instruction as an alternative to traditional in-person learning.

**Strengthened Communication With Parents**

Parents became important partners in learning during remote instruction, and teachers strengthened their relationships with families during the crisis. Participants believed this would and should continue beyond the crisis. At the conclusion of the 2020–2021 school year, teachers shared that they believed that strengthened communication with parents was likely to remain beyond the pandemic ($M = 4.29$, $SD = 1.29$ on a 6-point scale). One year later (May 2022), just under half (46.64%) of participants reported the increased communication with families as persisting beyond the pandemic.\(^1\) The manner in which communications take place has also shifted during the pandemic. During the 2020–2021 school year, survey participants indicated that meetings they had with parents—whether for formal parent-teacher conferences, IEP meetings, or conversations about a student’s progress—took place via Zoom (or other video conferencing platforms and they believed that this trend would persist. For many families, this made these meetings more accessible. Although not asked directly in a closed-response item in the May 2022 survey, participants indicated in open-response answers that virtual conferences did make a meeting with teachers easier. One teacher shared, “Family conferences on Zoom made it easier for families to hear about their students.” A teacher from Baltimore, Maryland shared that family meetings, IEP meetings, and staff meetings all continued to be conducted over Zoom.

**Discussion**

More than 25 years ago, Tyack and Cuban (1995) posited in their book *Tinkering Toward Utopia* that U.S. public education institutions were among the most resistant to change throughout society. At the same time, the COVID-19 pandemic and the subsequent measures that were taken to slow the spread of the virus represented a moment of great disruption, one that created at least the potential for lasting change in American public education. This paper contributes to our understanding of the impact that COVID-19 has had and continues to have on K-12 education in the United States.
The individuals who were gracious enough to share their perspectives across the four survey administrations far suggest that this is a moment that will see greater and more efficient use of technology in student learning. This is also a moment that has the potential to create schooling structures that do not necessarily involve attending school in a brick-and-mortar building from morning through mid-afternoon 5 days per week. As suggested by Zhao and Watterston (2021), the disruption caused by the COVID-19 pandemic could be a moment when schools offer a range of learning modalities or rethink the status quo by playing on the strengths of both asynchronous and synchronous learning. Although teachers in the May 2022 survey shared that this was the least prevalent change to persist in schools, almost one in five participants taught in a school that did continue to incorporate asynchronous learning into their school schedule. Asynchronous learning days have been one way in which school leaders have provided teachers with additional time to complete their professional work during the pandemic (Love & Marshall, 2022; Marshall et al., in press). This is especially important in light of research that demonstrates that teachers have experienced high levels of burnout and anxiety, and reduced levels of self-efficacy during the pandemic (Pressley, 2021; Pressley et al., 2021; Pressley & Ha, 2021). Future research should explore how this time is being used, and how this has impacted student learning.

Early evidence has suggested that students suffered academically, socially, and emotionally during the pandemic—especially those who attended school remotely for an extended length of time (Duckworth et al., 2021; Halloran et al., 2021; Santibañez & Guarino, 2021), there also exists some evidence that a small subset of students thrived with remote learning (Cash et al., 2022; Marshall & Neugebauer, 2022a). More than half of the teachers surveyed in May 2022 reported that their students could elect to learn in a fully online public school option. Future research should study the families that elect an online option, including the social, emotional, and academic outcomes of these students, and school leaders and instructional designers should incorporate a universal design for learning framework when crafting online instruction for elementary and secondary learners (Scott et al., 2015).

Aside from the additional use of technology in the classroom, the increased and sustained communication with families has been a silver lining of the pandemic. The findings from the four surveys described in this paper are consistent with Vanourek’s (2020) findings from the start of the pandemic. Interviews with 50 prominent leaders, teachers, and parents suggested that consistent communication with students and families was among the most important things school leaders could do at the start of the crisis. Qualitative work with teachers (Coady, 2022; Love & Marshall, 2022), school leaders (Marshall & Neugebauer, 2022a; 2022b), and superintendents (Cash et al., 2022) all found that expanded communication with families was a key to school success during the pandemic. These findings are also consistent with what was considered best practice prior to the COVID-19 pandemic—to consistently communicate and engage with parents and families about their child’s education (Curry, 2013; Kraft, 2017).
Several limitations associated with this work should be noted. First, these findings derive from four cross-sectional survey administrations across a two-year span. It is possible that some participants completed all four surveys; however, it is likely the case that each survey administration represents a different sample. Also, each of the surveys was administered to a voluntary and snowball sample. It is possible that those who elected to complete the survey differ from those who did not. Since much of the sample was derived from social media postings, it is possible that teachers who frequent social media sites may differ from those who do not in terms of their views on changes that were made in schools during the pandemic.

Conclusion

As Tyack and Cuban (1995) noted, change in schools is difficult. The increased acceptance and use of educational technology appears to be the greatest change that has taken place as a result of the COVID-19 pandemic. Although there are who suggest that this represents a missed opportunity to implement lasting change in K-12 education in the United States (e.g., Vegas, 2022) this is an important change all the same. Schools will be better situated to weather future crises with new digital infrastructure in place. When the pandemic forced schools to close, many, if not most, schools initially were forced to put together and send home mediocre paper-based instructional packets for their students to complete (Marshall & Neugebauer, 2022a). Although learning management systems were commonplace in higher education (Falvo & Johnson, 2007), they were not as common in American K-12 schools. Similarly, when meetings could not take place face-to-face, they simply did not happen. When schools had to close for extended periods as a result of inclement weather or other conditions that prohibited in-person learning, the school was simply closed. If COVID-19 brought about no other lasting changes in elementary and secondary education, the digital infrastructure that now allows for lesson plans and assignments to be accessed digitally; school leaders, parents, and teachers to meet remotely; and for learning to persist even if it is unable to take place in the brick-and-mortar school building. Worldwide, schools that have adopted the use of these technologies are better positioned to navigate the next crisis as a result.

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Note
1. As of this writing (May 2022), all COVID-19 mitigation efforts (masks, social distancing, testing, etc.) have ended due to low hospitalization and death rates resulting from the virus. It is noted that this is still a fluid status.

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