



# Educator Insights from a Year of Pandemic Schooling: Trends from the 2021 Tennessee Educator Survey



November 2021

*Jong Eun Jung & Susan Kemper Patrick*

As the first full school year during the COVID-19 pandemic, the 2020-21 school year brought much uncertainty and many challenges inside and outside the classroom. Many schools across Tennessee offered new forms of instruction, and educators often had to quickly pivot when faced with new constraints caused by the pandemic. Constant disruptions to schooling in the past year raise concerns that the pandemic will have a lasting and substantial effect on educators and students.

Given the ongoing challenges facing educators, it is vital to understand how school leaders, teachers, and counselors adapted to these challenges during the past year. In this brief, we highlight key takeaways from the 2021 Tennessee Educator Survey (TES). Following up from the 2020 Tennessee Educator Survey which included questions about the initial school closures due to the pandemic, the 2021 survey included new questions to understand changes in educators' experiences during the 2020-21 school year. Several concerns – including growing educational inequities and challenges with technology – continued into and throughout the 2020-21 school year. Our analysis provides educator perspectives and insights into COVID-related concerns that may be informative as the state and school districts continue to provide supports for recovery.

**In our analysis of the 2021 Tennessee Educator Survey, we identified four key findings:**

- 1 Changes in teachers' professional experiences and support:** Teachers' workload and support shifted this year, and teachers who taught both virtually and in person reported numerous challenges related to resources and time.
- 2 Persistent technology gaps:** Schools and districts invested considerable resources in technology, but gaps in access and training remain, especially among high-poverty and rural schools.
- 3 Issues concerning student engagement and attendance:** Teachers reported challenges with student engagement and attendance, especially for students learning virtually and those attending high-poverty schools.
- 4 Widespread concerns about missed instruction:** About two-thirds of teachers identified missing instructional time as the top concern for students during the 2020-21 school year, and most reported that they weren't able to cover as much of their formal curriculum than they have in past years.

## Data and Methods

In this report, we used data from the **2021 Tennessee Educator Survey (TES)**, an annual survey administered by the Tennessee Education Research Alliance (TERA) in partnership with the Tennessee Department of Education (TDOE). The 2021 TES included questions about educators' unique experiences in the 2020-21 school year, such as in-person and virtual instructional challenges, supports for virtual instruction, and concerns for students amid the pandemic. We also examined questions about school climate and professional experiences of educators that are asked annually on the TES.

This brief primarily focuses on survey responses from teachers, school leaders, and counselors. Half of all Tennessee teachers responded to the TES (N=33,886 teachers; 50% response rate) along with 54 percent of school leaders (N=2,066 school leaders). We also included school counselors (N=1,306) in certain analyses.<sup>1</sup> An additional 3,899 educators (e.g., instructional coaches, social workers, librarians) responded to the survey but are not included in this analysis. To better account for differential response rates, we used analytic weighting in the analysis to produce results broadly representative of all public school teachers and school leaders in Tennessee.

In addition to the questions described above, the survey also asked teachers, school leaders, and counselors two open-ended questions about the most urgent needs to support student learning and the biggest challenges that educators faced in their schools. About half of the responding teachers, school leaders, and counselors answered these open-ended questions, and we used natural language processing techniques to summarize their responses. See the technical appendix for more information about this analysis.

<sup>1</sup> We cannot calculate response rates for counselors because our current data cannot identify the counselors who did not respond to the survey.

## INSTRUCTIONAL MODALITY:

### Estimates of How and Where Teaching Occurred in 2021

Districts across the state opted for different instructional approaches during the 2020-21 school year, and many schools and districts updated these approaches throughout the year. To get a better handle on teachers' instructional experiences, we asked them to indicate if they had taught all their students in person, taught all their students virtually or through distance learning, or taught in-person and virtual students at the same time.

Ninety percent of responding teachers reported teaching virtually in some capacity in the 2020-21 school year (i.e., teaching at least some students or classes virtually) while 93 percent reported teaching in person in some capacity in 2020-21. Teachers were also asked about their primary teaching modality during the 2020-21 school year, and we created a school-level descriptor based on the aggregate responses of teachers in that school. Importantly, this categorization is only based on teachers' survey responses so it may not accurately capture the instructional modality in schools with lower teacher response rates. As shown in Table 1, in-person teaching

**TABLE 1**

<b>SCHOOLS' PRIMARY INSTRUCTIONAL MODALITY AS REPORTED BY TEACHERS</b>	
	<b>% OF SCHOOLS</b>
<b>All students in person</b>	<b>48%</b>
<b>In-person and virtual students at the same time</b>	<b>36%</b>
<b>All students virtual/distance</b>	<b>16%</b>

was the primary instructional model identified by teachers, with just under half of schools across the state teaching in person as their primary instructional mode.<sup>2</sup> For one-third of schools, the primary instructional modality was teaching both in-person and virtual students at the same time. The remaining 16 percent of schools were identified as having a primary instructional modality of either virtual or distance learning.

<sup>2</sup> These classifications are based on what teachers who responded to TES reported about their instructional modality in the 2020-21 school year. A small number of schools (N=46) were not classified because no teachers from that school responded to this question on TES. About half of these unclassified schools were charter schools.

## 1

### Teachers' workload and support shifted this year, and teachers who taught both virtually and in person reported numerous challenges related to resources and time.

Because of the challenges brought on by the pandemic, many teachers took on additional responsibilities and taught in new ways than in previous years. Accordingly, we examined teachers' responses on several questions that asked about their professional experiences, support for instruction, and professional learning. Where possible, we compared their responses this year to previous years to get a better sense of how, if at all, these have shifted over time.

**42%** of teachers surveyed in 2021 reported spending 10 hours or less on formal professional development this year compared to **30%** in prior years.

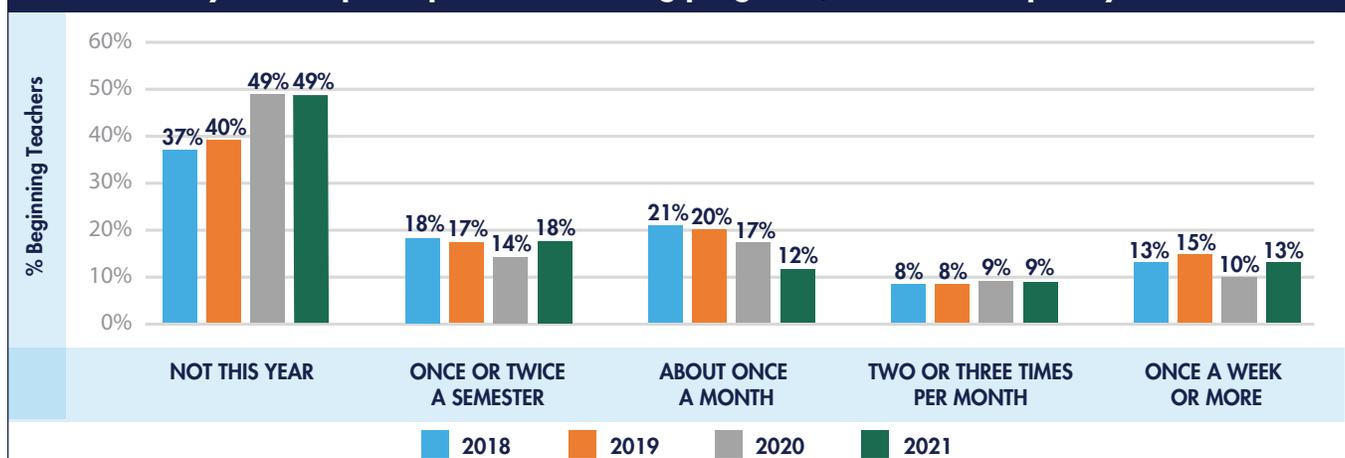


Across many broad questions on satisfaction, school climate, and perceptions of their school's leadership, teachers responded in 2021 in similar ways that they had in previous years, but there were notable differences in teachers' reported professional learning experiences. For example, teachers reported spending less time in formal professional development and mentoring programs, on average, compared to previous years. In fact, 42 percent of teachers surveyed in 2021 reported spending 10 hours or less on formal professional development this year compared to about 30 percent in prior years. This seems to be driven mostly by less frequent whole-school professional development sessions. In contrast, teachers reported collaborating with their peers in 2021 at about the same frequency as previous years.

Since professional learning supports can be particularly important for early career teachers, we also examined differences across years in reported supports for beginning teachers (defined here as being in your first two years of teaching). In both 2020 and 2021, about half of beginning teachers who responded to the professional learning questions reported that they did not participate in mentoring programs (see Figure 1). This represents an increase from prior year, and suggests that some early career teachers may have gotten less support due to the pandemic.

**FIGURE 1**

**About half of beginning teachers in 2020 and 2021 reported that they did not participate in mentoring programs, more than in prior years.**

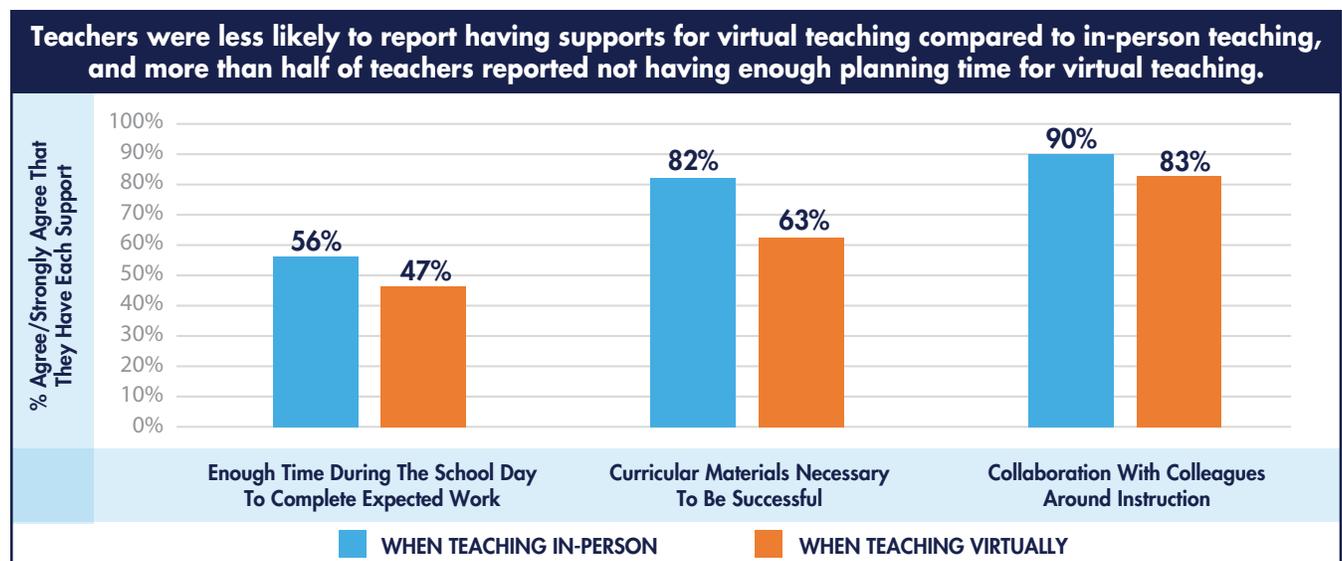




Additionally, given the particular challenges of this past year, the 2021 TES also included a new set of questions to capture teachers' perceptions of the supports they received for virtual and in-person teaching, including whether they had enough planning time, sufficient curricular materials, and collaboration with colleagues. Across the three supports, teachers were least likely to report having enough time, especially for virtual instruction (see Figure 2). Just under half of responding teachers (47 percent) reported having enough time to complete their work for virtual instruction during the workday while just over half (58 percent) of teachers reported having enough time to complete their work for in-person instruction. Teachers in primarily hybrid schools (i.e., schools in which the primary instructional mode was teaching in-person and virtual students at the same time) were the least likely to identify having enough time to complete their work.

Further, 82 percent of teachers reported having the curricular materials they needed to be successful while teaching in person while only 63 percent of teachers said that they had necessary materials for virtual teaching. Across both teaching modalities, the overwhelming majority of teachers reported that they were still collaborating with their colleagues.

**FIGURE 2**





## What Teachers Said about Their Professional Experiences

In the open-ended responses to the question asking educators to report on the biggest challenges, lack of time emerged as a top theme, and around 28 percent of educators included comments related to this topic.<sup>3</sup> Teachers mentioned challenges such as adapting their curriculum to a virtual setting, teaching both virtual and in-person students, and not having enough planning time because of other responsibilities. Some teachers explicitly mentioned the challenge of having less planning time this year or being required to cover classes during that time. Some teachers noted that it was especially difficult for them to balance a work and home life this year because of their added responsibilities.

**“Enough time to do everything that is asked of an elementary school teacher and still have time for family. It doesn’t lend itself to any kind of proper balance if you are teaching correctly and doing everything you are being asked to. Planning periods are NEVER a full planning period – constantly interrupted.”**

*– Elementary School Teacher in Middle Tennessee*

**“Being overwhelmed with the amount of work we have. This year has been especially difficult with students coming in and out of quarantine and juggling virtual students.”**

*– Elementary School Teacher in East Tennessee*

**“There is not enough time to teach in a hybrid model. Between the lost class time, messages, and extra duties, we are all exhausted. There are not enough hours in the day.”**

*– Elementary School Teacher in East Tennessee*

<sup>3</sup> The representative keywords for this topic include “time”, “virtual”, “student”, “teach”, “work”, “person”, “day”, “year”, “planning”, and “enough.”

# 2

## Schools and districts invested considerable resources in technology, but gaps in access and training remain, especially among high-poverty and rural schools.

The lack of access to Internet, devices, and technology training was a prominent challenge that appeared in the responses to the survey from the spring 2020 survey, as shown in [our previous brief](#). To understand how the issue concerning technology access changed from last year, the 2021 survey also included questions on this topic.

Table 2 shows that almost all responding school leaders (97 percent) reported providing digital devices and 83 percent reported providing hotspots to at least some students in their school during the 2020-21 school year to support virtual learning. Additionally, just over half of surveyed school leaders indicated that all students in their schools received a device during the 2020-21 year. However, the distribution of hotspots seemed to be more targeted, with just over half of school leaders reporting that 1 to 25 percent of students in their school received a hotspot and only 5 percent reported that all students received one.

School leaders in urban districts were most likely to report more distribution of both digital devices and hotspots. For example, more than two-thirds of school leaders in urban school districts (69 percent) reported providing a device for all students in their school compared to 61 percent in suburban districts, 47 percent in rural districts, and 42 percent in small town districts.



**School leaders reporting that they provided a digital device for all students:**

**69%**  
in urban districts

**61%**  
in suburban districts

**47%**  
in rural districts

**42%**  
in small town districts

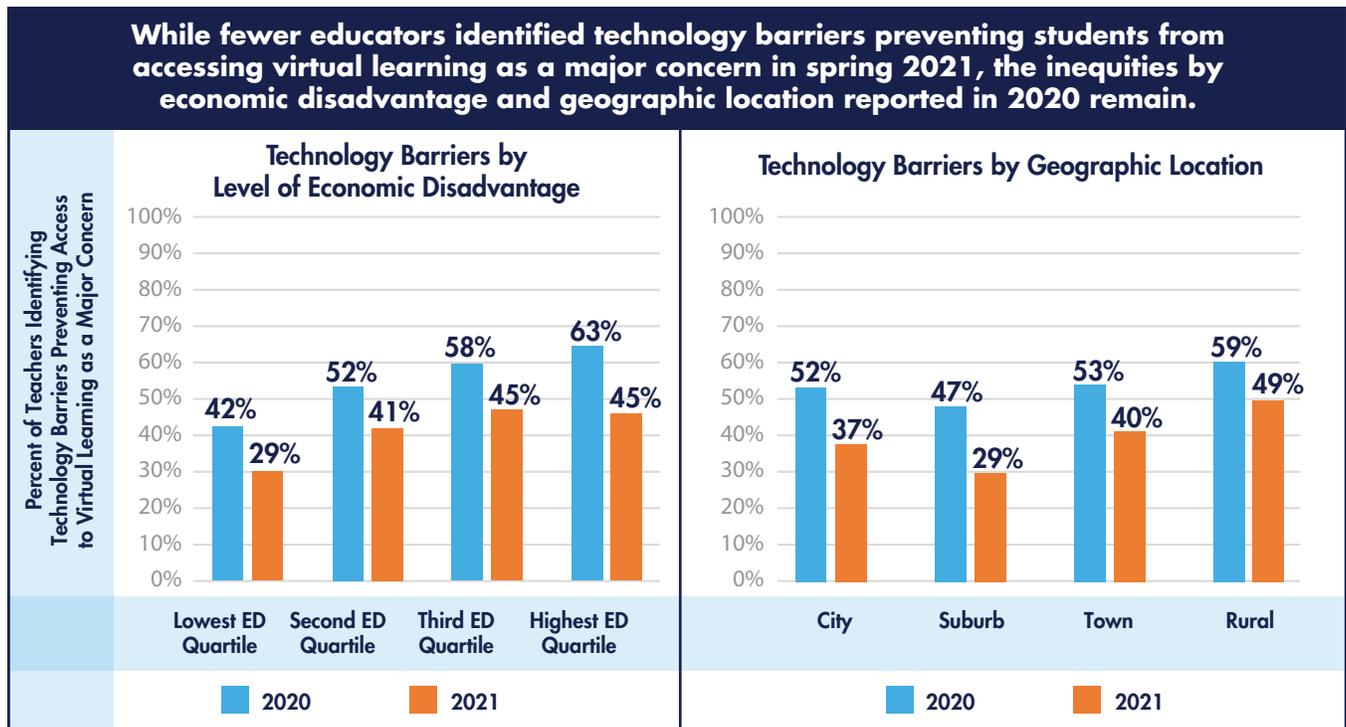
**TABLE 2**

**NEARLY ALL RESPONDING SCHOOL LEADERS REPORTED PROVIDING DIGITAL DEVICES AND 83 PERCENT REPORTED PROVIDING HOTSPOTS TO AT LEAST SOME STUDENTS IN THEIR SCHOOL IN THE 2020-21 SCHOOL YEAR TO SUPPORT VIRTUAL LEARNING.**

Technology distribution reported by school leaders	Digital devices (e.g., tablets or laptops)	Hot spots or other technology for students to access the Internet from home
<b>None of my students</b>	<b>3%</b>	<b>17%</b>
<b>1-25% of students</b>	<b>12%</b>	<b>57%</b>
<b>26-50% of students</b>	<b>8%</b>	<b>13%</b>
<b>51-75% of students</b>	<b>7%</b>	<b>5%</b>
<b>76-99% of students</b>	<b>15%</b>	<b>3%</b>
<b>100% of my students</b>	<b>56%</b>	<b>5%</b>

Despite this investment, a subset of administrators (38 percent) and teachers (33 percent) still identified “barriers preventing students from accessing virtual learning” as a major concern and inequities continue to exist along economic and geographic lines. As Figure 3 shows, fewer teachers identified technology barriers in 2021 than they did in 2020, however, teachers in higher-poverty schools were still significantly more likely than those in lower-poverty schools to identify technology barriers as a major concern – a trend also apparent in the 2020 survey. Similarly, almost half of all teachers in rural districts (49 percent) identified technology barriers as a top concern in 2021 compared to just 29 percent of teachers in suburban districts.

**FIGURE 3**



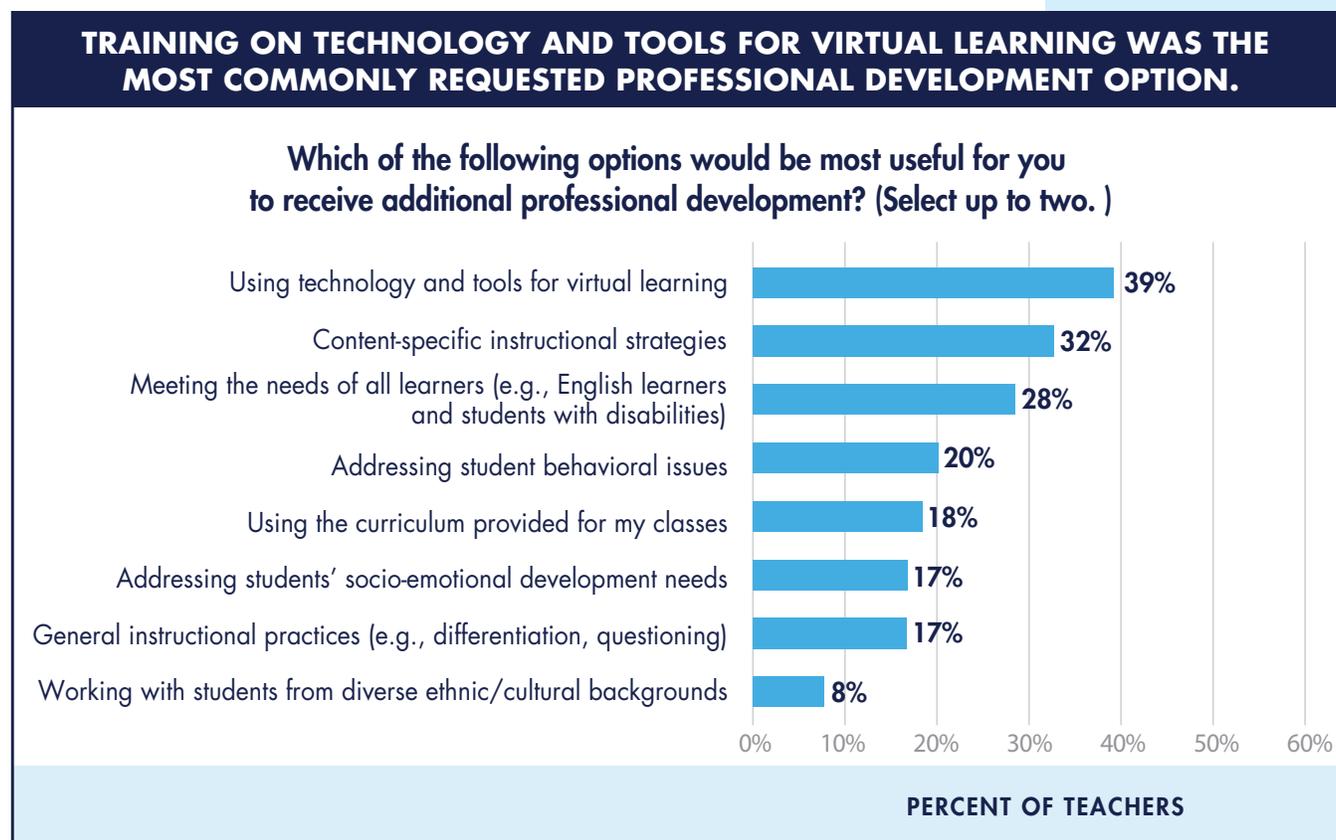


About **30%** of teachers in schools serving the most economically disadvantaged students and **40%** of teachers in rural schools identified **lack of internet access** as a major challenge for virtual instruction.

Further, when looking at teachers' reported challenges with virtual teaching, one-third of teachers in schools serving the most economically disadvantaged students identified lack of Internet access as a major challenge for virtual instruction compared to 15 percent in schools serving the fewest economically disadvantaged students. The percentages also differ by geographic location. Forty percent of teachers in rural districts identified lack of Internet access as a major challenge for virtual instruction compared to 16 percent of teachers in suburban districts. As such, high-poverty schools and rural schools still likely faced greater challenges concerning technology barriers during the 2020-21 year.

In addition to technology access, a subset of teachers—26 percent—also identified the lack of training for students or for teachers as a major challenge of virtual teaching this year. When asked about what type of professional development would be most useful, teachers most commonly selected using technology and tools for virtual learning (see Figure 4). High school teachers were most likely to identify technology training as one of their greatest needs for professional development. This gap in training will continue to be important because students will likely continue learning online through digital means in some way this year and going forward.

**FIGURE 4**





## What Teachers Said about Technology Access and Training

Teachers also raised concerns about technology in their open-ended comments on needs for student learning. Technology needs emerged as one of the top themes in our analysis and was mentioned by approximately 16 percent of respondents.<sup>4</sup> Further, just as in the closed-ended questions, teachers in schools with more economically disadvantaged students and in schools in rural districts mentioned issues related to technology more frequently in their open-ended responses.

**“There is still a MAJOR lack of infrastructure to support high-speed Internet usage in rural areas. Many students and teachers live in places where there are extreme limitations to accessing the Internet at all. When it is available choices are limited and the lag time or bandwidth (since the service is probably not high-speed) is crippling for students who are at home trying to learn virtually.”**

*– High School Teacher in West Tennessee*

**“Getting Internet access for all students at home. When we went remote, we realized the large gap in Internet access mainly based on where students live.”**

*– High School Administrator in Middle Tennessee*

<sup>4</sup> The most representative keywords for this theme include “access”, “student”, “internet”, “technology”, “device”, “use”, “need”, “computer”, “home”, and “training.”

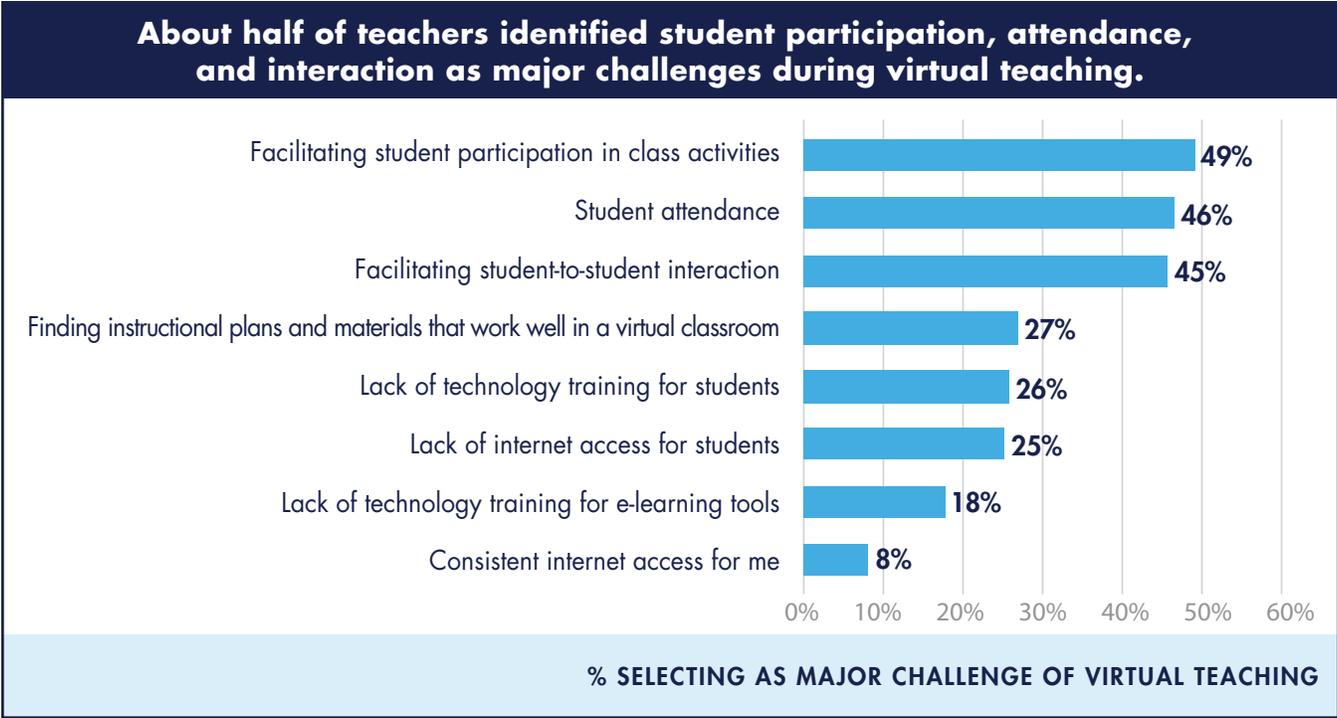
# 3

## Teachers reported challenges with student engagement and attendance, especially for students learning virtually and those attending high-poverty schools.

Across the board, teachers and students experienced school differently in the 2020-21 school year than in any other year. To learn more about difficulties in the classroom during this time, the survey asked teachers to gauge the extent to which they had certain instructional challenges while teaching virtually, teaching in person, or teaching within both modes of instruction.

Among responding teachers who had taught at least some virtually, almost half indicated that student participation, student attendance, and facilitating student-to-student interaction had been major challenges in the 2020-21 school year (see Figure 5). The identified challenges with student attendance and participation were similar for teachers in primarily virtual schools (schools in which the primary instructional mode was virtual or distance learning) and primarily hybrid schools (schools in which the primary instructional mode was teaching in-person and virtual students at the same time). In particular, middle school and high school teachers were more likely to identify challenges with attendance and participation when teaching virtually compared to elementary school teachers, with 56 percent of middle school teachers and 54 percent of high school teachers identifying attendance as a major challenge compared to 37 percent of elementary teachers.

**FIGURE 5**

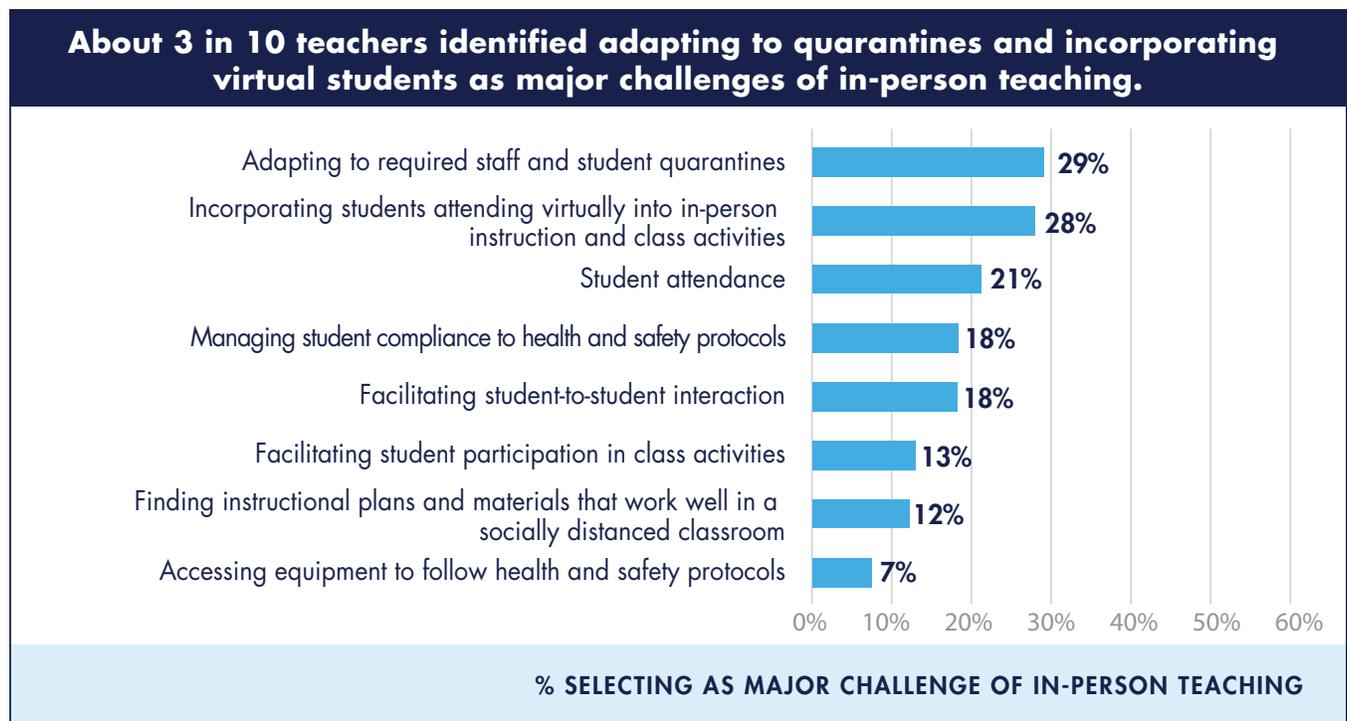


However, teachers reported different issues when asked about in-person teaching challenges, and fewer teachers identified major challenges about teaching in person than about teaching virtually. For example, while approximately half of teachers identified attendance as a major challenge when teaching virtually (as shown above in Figure 5), a smaller percentage of teachers (20 percent) identified it as an issue for in-person teaching (as shown below in Figure 6). Rather, teachers were more likely to identify adapting to required staff and student quarantines and incorporating students attending virtually into in-person instruction as major challenges to teaching in person.

In addition, teachers working in schools with primarily in-person instruction were less likely to select student attendance as an issue when compared to teachers working primarily in hybrid schools which offered both virtual and in-person instruction. Not surprisingly, teachers in primarily hybrid schools were more likely to report that incorporating students attending virtually into in-person instruction was a major challenge. Results were similar by school primary instructional modality across all other survey questions.



**FIGURE 6**



Further, teachers in higher-poverty schools were much more likely to identify attendance as a major issue when teaching virtually or teaching in person. Fifty-six percent of teachers identified attendance as a major issue while teaching virtually in schools serving the most economically disadvantaged students compared to 35 percent of teachers in schools serving the least economically disadvantaged students. The differences were not as stark for in-person teaching, with 24 percent of teachers in schools serving the most economically disadvantaged students identifying attendance as a major concern compared to 16 percent in schools serving the least economically disadvantaged students. This aligns with our findings from another recent report examining trends from a subset of Tennessee districts during the pandemic, which showed that schools with a higher proportion of economically disadvantaged students had sharper increases in chronic absenteeism. Results from both analyses suggest that lower-income students may have been systematically more likely to disengage with school during the pandemic than their more economically advantaged peers, likely due to the more severe health and economic burdens felt by low-income communities during the pandemic.<sup>5</sup>

Finally, in addition to student attendance and class participation, teachers also reported more challenges with virtual students completing their assignments than those who attended school in person. The survey asked teachers who had experience teaching both virtually and in person to estimate approximately how many of their students completed all or almost all of their assignments. As seen in Table 3, teachers overall estimated that 58 percent of virtual students completed their assignments compared to 84 percent of students learning in person.

**TABLE 3**

<b>Teachers estimated that 58 percent of virtual students completed their assignments compared to 84 percent of students learning in person.</b>		
	When learning virtually	When learning in-person
<b>All teachers</b>	<b>58%</b>	<b>84%</b>
<b>RESULTS BY SCHOOL LEVEL</b>		
<b>Elementary Teachers</b>	<b>60%</b>	<b>88%</b>
<b>Middle School Teachers</b>	<b>51%</b>	<b>78%</b>
<b>High School Teachers</b>	<b>57%</b>	<b>78%</b>



**ATTENDANCE AS A MAJOR ISSUE WHEN TEACHING VIRTUALLY**

**56%** of teachers in schools serving the **most economically disadvantaged students** identified virtual attendance as a major issue.

COMPARED TO

**35%** of teachers serving the **least economically disadvantaged students**.

<sup>5</sup> National studies indicate that lower-income individuals and individuals living in lower-income communities are at increased risk of COVID infections and deaths. Research on the economic impacts of the pandemic in Tennessee indicate that lower-wage workers were the most likely to lose their jobs during the pandemic (Adhikari et al., 2020; Koma et al., 2020; Tuggle, 2021).



## What Teachers Said about Student Engagement and Attendance

About 10 percent of educators mentioned concerns about student attendance and engagement in their open-ended responses on needs for student learning for the next school year.<sup>6</sup> They also mentioned concerns about the potential effects of extended student absences on students' learning and motivation and the need to offer opportunities to re-engage chronically absent students.

**"Many students have large learning gaps due to being absent or not having what they need when required to be out due to COVID. We need to offer learning opportunities to fill those gaps."**

*– Elementary School Teacher in Middle Tennessee*

**"Recovering content that was never able to be learned by the student or has been lost due to absences. It doesn't matter if the absences were excused or unexcused, the content is still missing."**

*– High School Administrator in East Tennessee*

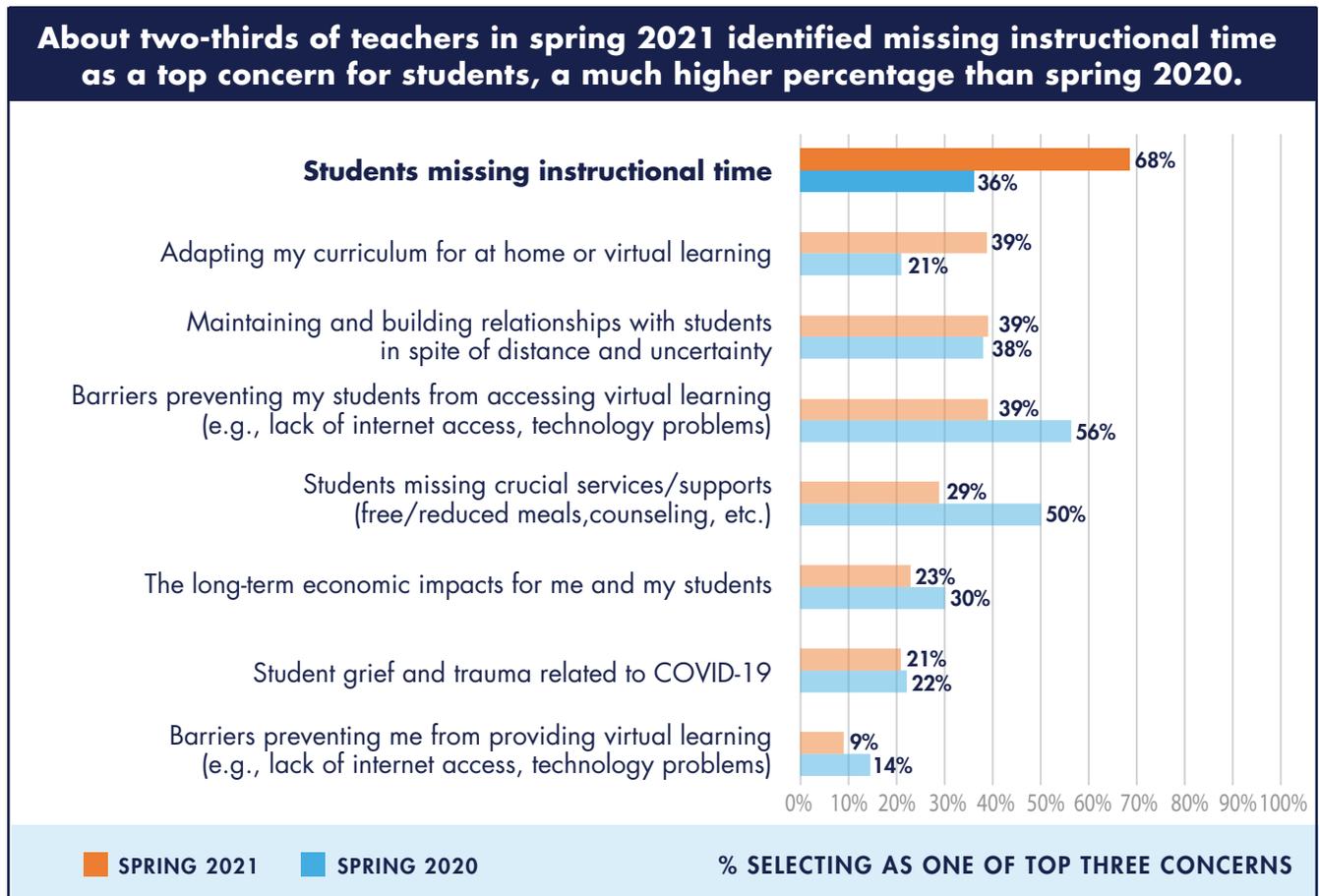
<sup>6</sup> Key words and phrases included "attend", "absent", "absence", "missed school", "missing classes", and "missing students."



**About two-thirds of teachers identified missing instructional time as the top concern for students during the 2020-21 school year, and reported that they weren't able to cover as much of their formal curriculum than they have in past years.**

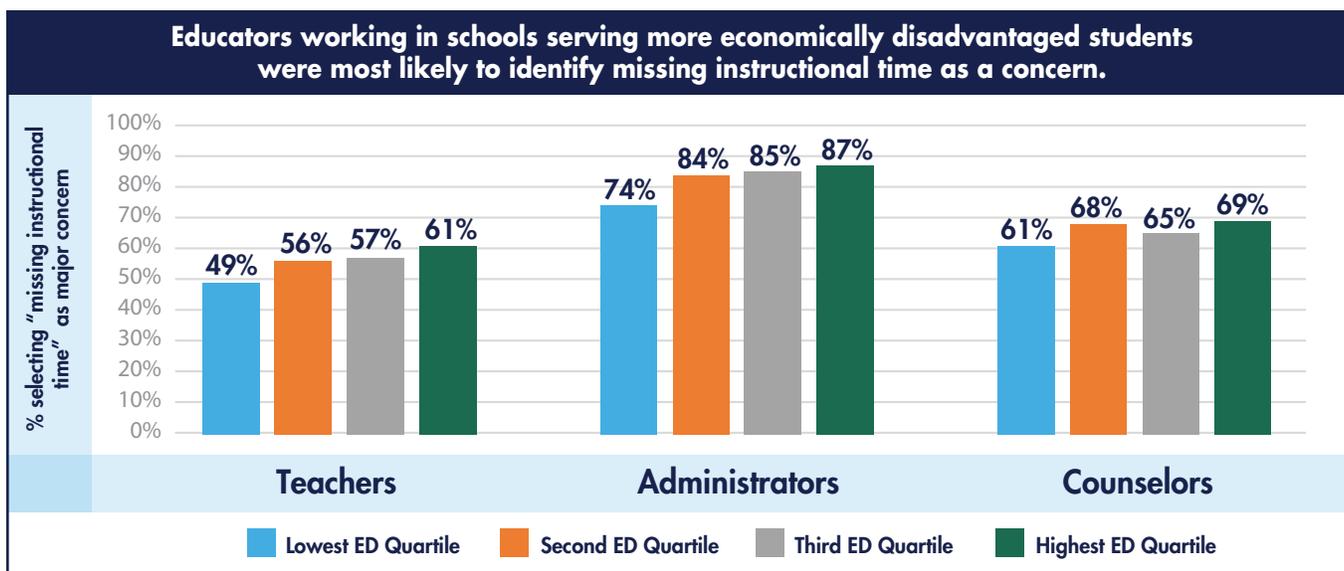
To learn more about the challenges educators are facing during the pandemic, both the 2020 and the 2021 surveys asked teachers to identify their biggest concerns for students. Amid the initial school closures in spring 2020, teachers were most concerned about students having access to the technology needed for remote learning and access to crucial services offered at school. However, one full year later in spring 2021, educators' top concerns shifted from students having access to resources to concerns about instruction, including students missing instructional time and needing to adapt curricula for at home or virtual learning. As shown in Figure 7, 68 percent of teachers chose students missing instructional time as their top concern in the 2020-21 school year.

**FIGURE 7**



Further, educators working in schools that serve a high percentage of students who are economically disadvantaged were more likely to identify missing instructional time as their top concern than those working in schools that serve wealthier communities. Figure 8 illustrates these differences based on four quartiles which categorize schools based on the percentage of students identified as economically disadvantaged during the 2020-2021 academic year. Teachers, administrators, and counselors in schools serving the most economically disadvantaged students were more likely to identify missing instructional time as a top concern than their peers in other schools. Multiple factors likely contributed to educators' concerns about missed instructional time, including less teaching time due to quarantines, challenges with virtual instruction, and potential issues with student attendance.

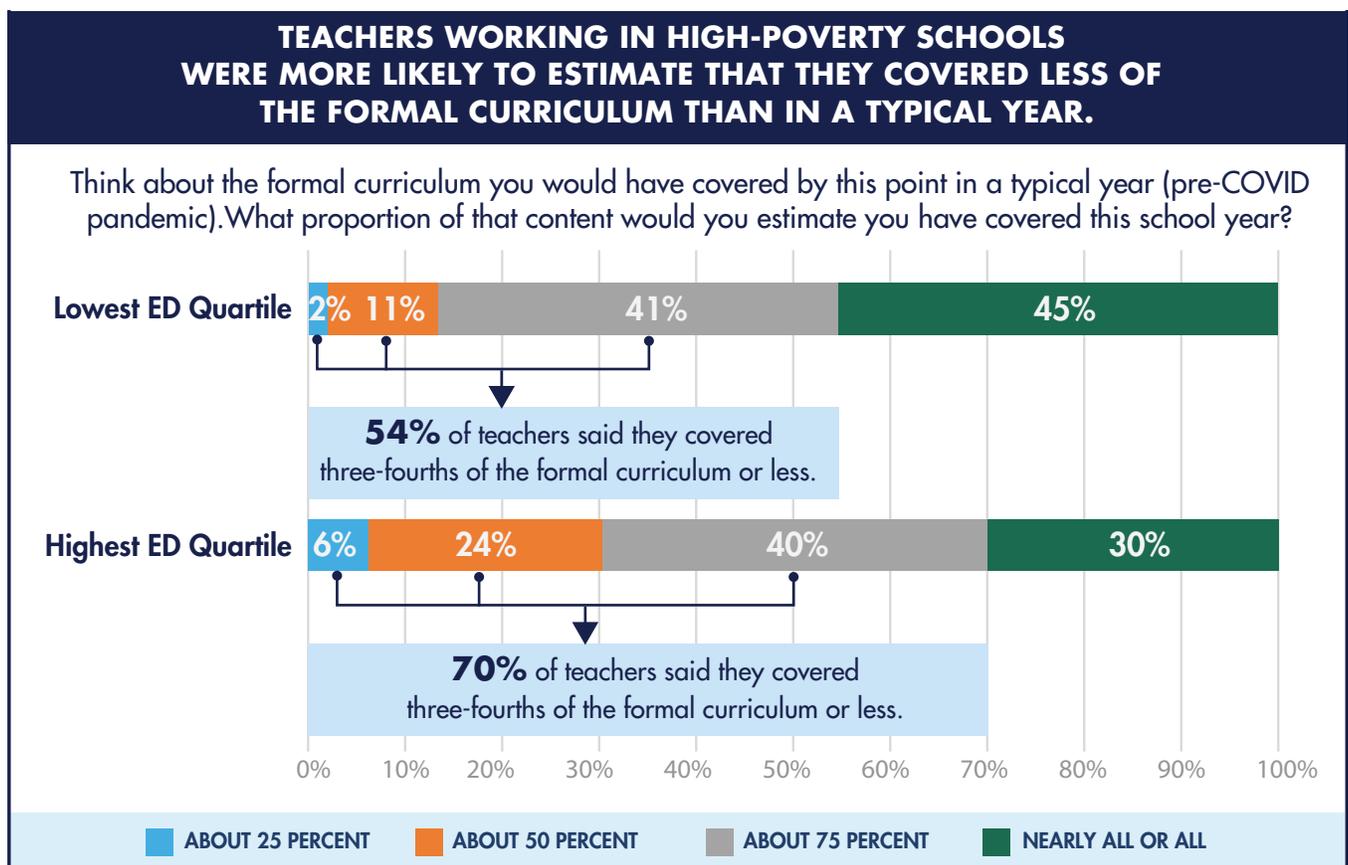
**FIGURE 8**



In conjunction with their concerns about missing instructional time, teachers also reported that they weren't able to cover as much of their formal curriculum in the 2020-21 school year compared to the amount covered in a typical, pre-COVID year. Roughly 6 in 10 teachers reported that they covered about 75 percent or less of the curriculum they would cover in a typical year.

In addition, as shown in Figure 9, teachers in schools serving the most economically disadvantaged students were the most likely to report much less coverage this year. In fact, 7 in 10 teachers who work in schools that serve the most economically disadvantaged students estimated that they covered 75 percent or less of the curriculum this year and 3 in 10 said they covered less than half. These patterns suggest that pandemic-related disruptions may have disproportionately influenced low-income communities and potentially contributed to widening educational inequities.

**FIGURE 9**



Note: <1% of teachers selected "None or almost none."

## What Educators Said about Supporting Student Learning Going Forward

The 2021 survey also asked educators an open-ended question about the most urgent needs to support student learning in the following summer and school year. In their responses, educators suggested various strategies, such as summer school and extended instructional time, extra time in specific subjects, and individualized support. One of the most mentioned needs (discussed by about 29 percent of educators) included the need for extra time in teaching specific subjects (e.g., math, reading, writing) and the need to focus on foundational skills.<sup>7</sup> Additionally, about 13 percent of responding educators discussed summer school or an extended school year or day to allow for additional instruction and remediation.<sup>8</sup> Finally, five percent of educators mentioned smaller class sizes and individualized support so that students could receive targeted instruction.<sup>9</sup> Comments within all three themes (summer school and extended instructional time, extra time in specific subjects, and individualized support) often discussed the need for remediation to fill in gaps in students' learning and make up for lost instructional time.

**"We need a summer school for high school students that has actual in class instruction with a teacher... These kids need a teacher to help get them back up to speed and functioning in a classroom again."**

*– High School Teacher in Middle Tennessee*

**"Time, give teachers and students time to fill gaps, teach what the students need, and stop rushing things along just so they are taught. Students need a good reading foundation especially K-2 and they cannot receive that if teachers are expected to stick to the pacing without time for remediation."**

*– Elementary School Teacher in Middle Tennessee*

**"Students will need access to highly qualified teachers, in a small group setting, to receive targeted instruction to address their learning gaps."**

*– Elementary/Middle School Administrator in West Tennessee*

<sup>7</sup> Representative key words in this theme include "skill", "read", "math", "student", "need", "reading", "basic", "practice", "write", and "foundational."

<sup>8</sup> Representative key words in this theme include "summer", "school", "student", "need", "program", "fall", "opportunity", "learn", "learning", and "provide."

<sup>9</sup> Representative key words in this theme include "class", "need", "group", "student", "small", "instruction", "one", "service", "intervention", and "classroom."

# CONCLUSION AND IMPLICATIONS

After schools reopened in fall 2020, educators and students faced many difficulties and uncertainties while adapting to the changes brought on by the pandemic. We analyzed over 40,000 responses from educators across Tennessee to understand what persisting and new challenges schools faced during the 2020-21 school year, compared to previous years. The four key findings from our analysis emphasize concerning and growing inequities in terms of students' engagement and access to instructional supports during the pandemic. To address such inequities, the results suggest three areas that may need additional support in the following school year:



**Educators need more planning time and professional support, especially when being asked to take on new instructional responsibilities.** Educators were asked to take on many new responsibilities this year, and many discussed the particular challenge of teaching virtual and in-person students at the same time. As some districts and schools continue to face quarantines and illness this year, it will be important to address these challenges and ensure that teachers have more planning time and materials to support virtual instruction if needed, and students who are again missing instructional time. As they navigate the ongoing challenges and stresses related to the pandemic, teachers will need both personal and professional support. Only half of beginning teachers in 2020 and 2021 reported participating in mentoring programs, and these sorts of professional supports may be particularly important to ensure that early career teachers are supported during this particularly difficult time.



**Technology barriers continue to disadvantage schools serving rural and more economically disadvantaged communities.** Although almost all school leaders report providing devices to students during the 2020-2021 year, inequities persist in educators' reported challenges with technology and internet access for virtual learning. Aligning with our findings from last year's brief, educators in rural districts and in schools serving the most economically disadvantaged students continue to be the most likely to identify technology barriers and issues with internet access. In the past year, Tennessee districts have invested considerably in purchasing technology for students and the state has invested considerably in rural broadband infrastructure.<sup>10</sup> Bridging the digital divide will continue to be an important issue given the increasing use of technology-assisted instruction in school and targeted use of virtual instruction during the 2021-22 year.



**Teachers need additional resources and support to promote accelerated learning that can make up for missed instructional time.** More than two-thirds of educators indicated that missed instructional time was their biggest concern for students during the 2020-21 school year. In their open-ended comments, educators mentioned the need for additional learning time through summer school or extended day, extra focus on foundational skills, and individualized support for students, among other potential solutions, to try to make up for lost time. Teachers also identified student attendance as a major concern, especially those teaching virtually and teaching in schools serving more economically disadvantaged students. Targeted supports may be needed to re-engage chronically absent students. As the 2021-2022 year unfolds, it may be extremely hard for teachers to provide these supports on top of their existing responsibilities. Additional staff and targeted instructional resources may be necessary to provide high quality learning supports for students.

<sup>10</sup> The Tennessee Department of Education designated \$50 million from the Coronavirus Aid, Relief, and Economic Security (CARES) funding to go towards district technology grants (TDOE, 2020). Tennessee's state government has invested \$60 million in rural broadband infrastructure since 2017 (TACIR, 2021).

# TECHNICAL APPENDIX

As part of this report, we used natural language processing techniques to analyze educator responses to two open-ended questions on the 2021 TES. The first question asked, “What are the most urgent needs to support student learning over the summer and fall of 2021?” Of all responding teachers, school leaders, and counselors, about half answered this open-ended question (N=14,265 teachers; N=959 school leaders; N=749 counselors). We also analyzed the responses to another open-ended question that asked, “What are the biggest challenges you and your colleagues experience in your school?” About 20,000 educators responded to that question (N=16,597 teachers; N=1,133 school leaders; N=1,963 other educators). We examined both sets of comments using natural language processing techniques, which allowed us to identify the most common and relevant words and phrases, compare the frequency of comments using keywords (e.g., summer school, student attendance), and group comments into themes using topic modeling. These responses were also connected to administrative data at the individual, school, and district level. Although the responses provide a qualitative insight into the challenges concerning educators, it is important to note that the findings from these two questions may not be representative of the entire state. Early career teachers, teachers of color, teachers in city school districts, and teachers in schools serving more economically disadvantaged students are all underrepresented in the sample of teachers who responded to the open-ended questions. When it comes to administrators, administrators in high schools and administrators in city school districts are underrepresented.

## REFERENCES

Adhikari, S., Pantaleo, N.P., Feldman, J.M., Ogedegbe, O., Thorpe, L., & Troxel, A.B. (2020). Assessment of community-level disparities in coronavirus disease 2019 (COVID-19) infections and deaths in large U.S. metropolitan areas. *JAMA Network Open*, 3(7). doi:10.1001/jamanetworkopen.2020.16938

Koma, W., Artiga, S., Neuman, T., Claxton, G., Rae, M., Kates, J. & Michaud, J. (2020). Low-income and communities of color at higher risk of serious illness if infected with COVID. Kaiser Family Foundation. <https://www.kff.org/coronavirus-covid-19/issue-brief/low-income-and-communities-of-color-at-higher-risk-of-serious-illness-if-infected-with-coronavirus/>

Tennessee Advisory Commission on Intergovernmental Relations. (2021). *Broadband Internet Deployment, Availability, and Adoption in Tennessee Four Years After the Broadband Accessibility Act (Public Chapter 228,*

*Acts of 2017)*. Tennessee Advisory Commission on Intergovernmental Relations. [https://www.tn.gov/content/dam/tn/tacir/2021publications/2021\\_BroadbandUpdate.pdf](https://www.tn.gov/content/dam/tn/tacir/2021publications/2021_BroadbandUpdate.pdf)

Tennessee Department of Education (2020). Gov. Lee Announces \$81 Million in Coronavirus Relief Grants for K-12 and Higher Education Institutions. Tennessee Department of Education. <https://www.tn.gov/education/news/2020/7/7/gov--lee-announces--81-million-in-coronavirus-relief-grants-for-k-12-and-higher-education-institutions.html>

Tuggle, B. (2021). Covid Recession: Tracking Tennessee's economic recovery to date. Sycamore Institute. <https://www.sycamoreinstitutenetn.org/tennessee-covid-economic-recovery/>

