Summary
In March 2020, community and technical colleges across Tennessee prepared for a significant change in the delivery of instruction for their 140,000 students. To protect students, faculty, and staff from the risks posed by COVID-19, colleges shifted to online or remote learning for nearly all courses within weeks.

The College System of Tennessee was able to quickly adapt to an online environment because of experience gained through the TN eCampus partnership and colleges’ significant investments in online education. However, the shift to online or remote instruction presented challenges for many programs that provide hands-on training and for students who lacked access to reliable Internet service or Internet-enabled devices.

Faculty across the state worked rapidly to adapt courses for online instruction. To better understand the response of faculty, TBR asked about their experiences and challenges. In May 2020, faculty from the system’s community colleges and colleges of applied technology (TCATs) were surveyed. Full-time and adjunct faculty from across the colleges were invited to participate.

Key Findings
The results of this survey point us toward six key insights about online and remote learning during spring 2020.

• Almost all faculty adapted at least one in-person course for online learning in March, but the tools they used differed by program, experience, and college.
• According to faculty, most students adjusted well, but some struggled to remain engaged in coursework.
• Students’ lack of access to technology posed significant challenges according to faculty, especially for students who lacked reliable Internet service.
• Faculty extended flexibility to students by adjusting assignments and deadlines, but their grading standards remained high.
• Faculty reported common challenges across colleges, but these challenges differed based on faculty members’ prior experience with online teaching.
• Faculty are interested in additional resources about online instruction; they are especially interested in student-facing resources about succeeding online.
About the Respondents

1,528 Number of Survey Responses

38% of Full-Time Community College Faculty Participated

12% of Adjunct Community College Faculty Participated

45% of TCAT Faculty Participated

About the Survey

The TBR Faculty Survey was available throughout May 2020 to all TBR faculty. It included questions like:

• How did faculty adapt their courses? What tools were effective?
• How did the shift to online learning affect student engagement?
• What methods or tools did faculty use to overcome challenges like students’ lack of access to technology?

In total, 1,528 full-time and adjunct faculty responded to the survey. This represented 26% of all faculty (38% of full-time community college faculty and 45% of TCAT faculty). The response rate was lower for adjunct faculty at community colleges; only 12% of the system’s 3,124 community college adjunct faculty participated.

Many of the faculty had prior experience teaching online, but this differed by college and faculty type. When asked to rate their prior experience with online teaching on a scale from zero to ten, 39% of community college faculty rated their experience as a nine or ten, indicating significant experience; 57% of TCAT faculty rated their experience at zero, indicating no experience. The figure below shows faculty members’ average rating of their experience by faculty type.
How did COVID-19 affect the delivery of instruction at TBR colleges?

Faculty shifted almost all in-person courses to online or remote delivery.

The majority of faculty respondents moved at least one course from in-person instruction to online or remote instruction as a result of COVID-19. Overall, 84% of faculty moved all of their in-person courses to online instruction. Seven percent moved at least one in-person course online, even if other courses were paused and suspended. Another 7% were already teaching fully online prior to the changes related to COVID-19. In total, courses were completely paused and suspended for only 2% of faculty respondents.

After the move to online instruction, students interacted with course materials frequently. As the figure below shows, most faculty (56%) said that the average student continued to engage with course materials a few times each week or every day.

Faculty communicated frequently with students.

Additionally, many faculty reported that they communicated with their students more frequently than they would have during a typical semester. In total, 42% of faculty (and 51% of full-time faculty at community colleges) said that they communicated with students more after the move to online instruction. Only 21% of all faculty said they communicated less frequently after the move to online and remote learning.

As the figure below shows, communication was especially frequent from community college faculty, 49% of whom said they communicated with their students more in Spring 2020 than they would typically. For TCAT faculty, the move from daily in-person instruction to online learning may have resulted in less frequent communication, according to faculty survey responses.
How did faculty adapt courses for online or remote instruction in spring 2020?

Faculty used a combination of teaching methods and tools.

As in-person courses transitioned to online or remote learning, most faculty survey respondents used a variety of teaching methods to engage students and deliver instruction. Among community college faculty, asynchronous tools (like D2L Brightspace, email, and recorded lectures) were most common; however, 58% of community college faculty also reported using synchronous videoconferencing tools like Zoom or Teams. For TCAT faculty, asynchronous tools like D2L Brightspace and recorded lectures were used less frequently than at community colleges. Instead, TCAT faculty were more likely than community college faculty to use videoconferencing tools or online simulations.

Faculty also answered open-ended questions about the most effective instructional methods for their students after the move to online and remote learning. As the figures below show, faculty had mixed opinions about the effectiveness of pre-recorded lectures and discussion boards. Many faculty also noted challenges with testing and proctoring of online exams, Internet access issues, and the overall lack of hands-on training.
After moving in-person courses to online or remote learning, many faculty adjusted assignments and deadlines. However, a minority of faculty reported changes to grading standards or their expectations about the quality of work that students would complete.

When asked what types of changes faculty made to courses or grading practices when in-person courses shifted online, a majority of faculty reported changing assignments (59%) or changing assignment deadlines (66%).

Many of the faculty survey respondents made changes to the amount of work that students would be expected to complete, rather than the quality of work; just under half reported that they adjusted the amount of work (46%), but fewer faculty (28%) reported adjusting expectations about the quality of work students would be expected to complete.

However, while grading standards remained high, more than a third said they graded more leniently (36%), and some (14%) reported giving more grades of “Incomplete” than in the past.
How well did students adjust to the shift to online and remote learning?

According to faculty, most students adjusted well to course changes.

When asked how students adjusted to the changes that were made because of COVID-19 on a scale of zero to ten, where ten indicates students adjusted very well and zero indicates students adjusted poorly, 54% of faculty rated students’ adjustment at a score of seven or higher.

Faculty respondents were also asked to explain their ratings of how well students adjusted. These open-ended responses were analyzed using content analysis techniques that identified common themes throughout their responses.

In their answers, community college faculty, both full-time and adjunct, expressed issues with student engagement and technology. For TCAT faculty, concerns about the lack of hands-on or experiential learning was also a common theme throughout their responses. As the figure below shows, concerns about student engagement and experiential learning were common among faculty who said that students did not adjust well during the transition to online learning.
Most students remained engaged in coursework. Most faculty also reported that students remained engaged in coursework after the move to online or remote learning. When asked to compare students’ engagement in coursework during online learning relative to their engagement prior to COVID-19, the majority of faculty reported that students were equally or more engaged. However, a third of all faculty respondents (33%) reported that students were somewhat less engaged, and 14% reported that students were much less engaged.

Concerns about student engagement were especially common among faculty with less experience teaching online. Among faculty with the least prior experience teaching online, 49% said students were less engaged than before, compared to 42% of the faculty with the most prior experience teaching online.

“In addition to being online, many of our students were laid off from work. We also had tornado and storm damage in our area, so power was out for many of us for a few days. Despite all of this, our students have done an amazing job of meeting all the requirements of the course.”

—Community College Faculty Member

“How engaged have your students been since the move to online learning? Relative to their Level of Engagement Prior to COVID-19

- Much less engaged: 14%
- Somewhat less engaged: 33%
- About as engaged as before: 36%
- Somewhat more engaged: 12%
- Much more engaged: 5%

Concerns about student engagement were especially common among faculty with less experience teaching online. Among faculty with the least prior experience teaching online, 49% said students were less engaged than before, compared to 42% of the faculty with the most prior experience teaching online.

“The bright spot was that students and faculty suddenly had more in common than ever before. I felt more connected to my students than ever before and focused on what was really important to them, rather than what was important to me. A lesson in empathy that I believe made me a better teacher.” —Community College Faculty Member
What challenges did students and faculty face during the shift to online learning?

Some students lacked access to reliable Internet service or computers.

The survey included a series of questions about the types of challenges that faculty faced during the transition to online or remote learning. Faculty faced many shared challenges, but those challenges differed by college type, teaching subject, and other faculty characteristics.

Most notably, the challenges that faculty faced differed significantly based on faculty’s prior experience teaching online. Faculty with little experience struggled most with the basics of adapting courses and using technology; more experienced faculty were focused more on learning how to balance work and home, both for themselves and their students.

The survey also identified several challenges related to equitable access to technology. While the majority of faculty said that it seemed like most of their students had access to reliable Internet service or devices, this was not true everywhere, especially in rural parts of the state or at some institutions, as shown in the figure to the right.

“Nothing compares to hands-on training. The theory work is okay online if students can get access to the Internet. Internet is unavailable in a lot of rural areas, which is where a lot of our students live.” – TCAT Faculty Member

![Bar chart showing differences in access to reliable Internet service or devices between All Faculty and institutions.](image)

![Bar chart showing the most significant technology issues faced by students.](image)
Faculty reported common challenges, but faculty with less online teaching experience reported more challenges with technology.

Faculty across all colleges reported a series of common challenges during the transition to online and remote learning, including challenges learning to use online technology and tools, adapting course materials for the online environment, or properly assessing student learning with proctoring tools.

However, as the figure to the right shows, faculty with significant prior experience teaching online faced a different set of challenges than faculty who were less experienced. Faculty with prior experience teaching online were more likely to express concerns about work-life balance, while faculty with less prior online experience were more likely to share challenges related to online teaching tools or the logistics of teaching online.

Faculty were also surveyed about their concerns or worries as they prepared for the fall 2020 term. These open-ended responses were analyzed using content analysis tools that group responses into common themes. The figure to the right shows the most prevalent themes in their responses, based on words and phrases used by faculty.

Faculty expressed concerns about the difficulties of delivering hands-on experiential training in an online or remote environment. Faculty also had concerns about internet and technology access, using test proctoring tools, and time to prepare for online teaching.

"Every single faculty member I have spoken with spent the second half of the spring semester fighting for our students. We all worked round the clock to create new content online, communicate with students, and try to create some new version of normal. I had countless conversations with students that needed just as much emotional support as academic support...They're stressed, depressed, scared, and vulnerable...Please make sure all colleges have ample access to counselors for our students." --Community College Faculty Member
What training or resources do faculty need to be successful?

Faculty are interested in student-facing resources about success in online courses.

Faculty survey respondents also answered a series of questions about training or resources that would be helpful if online learning continued. As the figures below show, faculty identified materials to share with students about succeeding online as the most important area for future training or resource development, alongside resources about best practices in teaching from home. A content analysis of open-ended responses about training or resources also revealed some themes among faculty, including technology access and training and help with course creation. Interest in technology access and training was common among all faculty, but it was especially prevalent among faculty who were new to teaching (1 year of experience or less) or those who had been teaching 16 years or more.

### What training or resources would be helpful if online learning continues in fall 2020?

<table>
<thead>
<tr>
<th>Training/Resource</th>
<th>Community College Full-Time</th>
<th>Community College Adjunct</th>
<th>TCAT Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials to Share with Students about Succeeding Online</td>
<td>413</td>
<td>197</td>
<td>190</td>
</tr>
<tr>
<td>Best Practices on How to Teach from Home</td>
<td>312</td>
<td>140</td>
<td>144</td>
</tr>
<tr>
<td>Information on How to Support Online Students</td>
<td>269</td>
<td>160</td>
<td>153</td>
</tr>
<tr>
<td>Assistance with Technology</td>
<td>237</td>
<td>127</td>
<td>131</td>
</tr>
<tr>
<td>A Resource Toolkit about Online Teaching</td>
<td>208</td>
<td>115</td>
<td>128</td>
</tr>
</tbody>
</table>

### If you continue teaching online in the future, what would you like to learn more about?

What kind of tools, resources, or training might be useful to you?

**Themes from Open-Ended Responses**

- Technology Access & Training
- Course Creation
- Student Engagement
- Experiential Learning
- Nothing Needed

Common Themes

- Technology Access & Training
- Course Creation
- Student Engagement
- Experiential Learning
- Nothing Needed
About the Survey Data and Our Analysis

Analysis of Open-Ended Questions

The survey included 11 questions with open-ended responses. Five of these questions were chosen for detailed analysis based on the potential to use the results to inform future training about online teaching. Those questions were focused on effective instructional practices in spring 2020 (questions 17 and 18), perceptions of students’ adjustment to remote learning (question 36), interest in future training (question 45), and faculty concerns for the future (question 46).

Two of these, questions 36 and 45, were targeted for further analysis involving manual coding by three independent raters. Each rater reviewed the answers to learn the general types of responses. The table below contains the number of responses for these questions.

<table>
<thead>
<tr>
<th></th>
<th>Responses</th>
<th>Question 36</th>
<th>Question 45</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Respondents</td>
<td>1,528</td>
<td>1,400</td>
<td>1,060</td>
</tr>
<tr>
<td>Community College Faculty</td>
<td>1,123</td>
<td>980</td>
<td>782</td>
</tr>
<tr>
<td>TCAT Faculty</td>
<td>385</td>
<td>345</td>
<td>286</td>
</tr>
<tr>
<td>Full-Time Faculty</td>
<td>1,025</td>
<td>910</td>
<td>758</td>
</tr>
<tr>
<td>Adjunct Faculty</td>
<td>410</td>
<td>348</td>
<td>265</td>
</tr>
</tbody>
</table>

Based on the initial reviews, themes were created for each question. The responses for each question were then divided equally among three raters and an additional 100 questions were assigned to each rater to provide overlap in coding.

Analysis of the responses revealed low interrater reliability on some themes due to low sample sizes or overlap between themes. These themes were combined or eliminated from further analysis. The values for Cohen’s Kappa, indicating interrater reliability, for the final themes, ranged from 0.4-0.6: Moderate Agreement to 0.6-0.9: Substantial Agreement, and there was one 1.0: Perfect Agreement.

For the remaining open-ended questions, responses were analyzed using natural language processing tools that identify frequent keywords and group responses into themes based on relevant words. For each open-ended question, comments were stripped of punctuation and irrelevant words. Each response was then coded using a Bag-of-Words technique to create a library of all words used in the responses. Then, responses were analyzed using Latent Dirichlet Allocation, which grouped responses for each question into ten topics based on the use of relevant keywords.
Interactive Results Dashboard

A faculty survey dashboard shows the full results.

The dashboard allows users to filter the results by college, faculty experience, and teaching subject.

The dashboard is available on the TBR website at tbr.edu/policy-strategy/presentations-and-papers