EXECUTIVE SUMMARY

298 university students from 50 different schools across the United States shared their experiences during the rapid shift to remote instruction that took place in Spring 2020. Students rated their overall learning experiences during remote instruction as slightly better than neutral, down from a pre-covid rating of good. The decrease was more pronounced for undergraduates than for graduate students and for women than for men. There was a notable rise in the quality of learning experiences reported over time as the situation stabilized after the initial transition. Final values were only slightly below the “somewhat good” level reported for prior online course taken.

Students’ feelings shifted over time from nervousness to resignation to being okay with the situation. A stable fifth reported feeling upset. Students further described feeling overwhelmed with the simultaneous demands of multiple courses and anxious they would miss something, even though many valued the additional flexibility. This tension between needing a clearly communicated structure and wanting freedom was a theme throughout descriptions of students’ experiences.

Students had mixed reactions to lectures delivered ‘live’ online, but universally valued the ability to review recordings. Interaction during class was important to students; many found it difficult to engage online, though some found it easier than in the classroom. The biggest thing students missed was connections with classmates. Other suggestions were better structure, communication and opportunities for active engagement, as well as improved use of technology. Finally, students emphasized the need for compassion and flexibility as they dealt with the ongoing challenges of the pandemic.

BACKGROUND

In March 2020, the majority of higher education institutions in the United States rapidly pivoted to remote instruction in response to the worldwide COVID-19 pandemic. It was a time of dramatic change for faculty and students alike as professors were asked to move their courses online virtually overnight and students were required to complete their studies off campus. While the result was far from a “regular” online learning experience, it did offer the chance to learn about the issues involved in widespread, sudden virtual instruction. With this in mind, LEARN opened a student survey in Spring 2020 to find out what students found worked, what didn’t and how they experienced the shift. As we move into a Fall term in which many schools remain remote or adopt a hybrid model, the results our current efforts and help everyone figure out how to do this better.

“Honestly, classes that were engaging beforehand remain engaging.”

METHODOLOGY

An IRB-approved survey was made available online from mid March to late June 2020. University students in the United States were invited to participate via email and social media, resulting in a convenience sample of 298 respondents. Fifteen questions asked students about their current learning experiences, their experiences with their current courses before going online, and any prior online learning experiences they had. In ten closed ended questions, students shared what tools were being used for remote instruction, how they accessed these tools, as well as their reaction to and feelings about the move online. In five open ended questions, students elaborated on their current and past experiences with online courses, explaining what they found to be working, what was not, and giving suggestions for improvement.
DEMOGRAPHICS

Student respondents came from 50 different schools across the United States. Students from NYU made up 39% of the total respondents, but showed no significant differences from students from other universities on any of the measures. Thus results are reported jointly. 65% of respondents indicated their gender, level of school and field of study. There was a predominance of women and undergraduates, with students’ fields of study relatively evenly distributed across arts and humanities, science technology engineering and math, and social sciences and business (see Figure 1).

TECHNOLOGIES & LOGISTICS

What tools were used to conduct courses?

Remote instruction in Spring 2020 showed a heavy reliance on video conference tools such as Zoom, which were used by 88% of students. 57% of students reported using their school’s Learning Management System (LMS), while 15% described using a non-school LMS. This left over a quarter of students taking courses with no LMS shell at all. These tool use patterns contrast with standard design practices in online learning, showing that what occurred in Spring 2020 is better characterized as “Emergency Remote Teaching” (Hodges et al. 2020). The use of various communication and collaboration applications was reported by a sizable number of students as well. 57% described using collaborative editing tools such as Etherpad or GoogleDocs and 26% used messaging tools such as Slack.

What tools did students find most helpful?

Students described the video conference tools (most often Zoom) as working reasonably well for lectures, finding it useful to view instructors’ presentation and resources via the screen-sharing function. Students also found support for interactivity in conferencing, primarily in the form of breakout rooms. Despite these successes, students often commented that there was an over-reliance on Zoom as a platform for learning. Students also mentioned that when used, they found collaboration tools such as shared GoogleDocs and GoogleSlides, to be helpful. Despite their widespread use, students rarely referred directly to school or non-school LMSs in their comments about what was or wasn’t working.

How did students access their courses?

The vast majority of students (96%) reported using their own desktop or laptop to access their courses, while only a small percentage (14%) accessed courses via mobile devices (tablets or cellphones). This is likely due to concern about the pandemic and stay at home orders in place at the time; however it does present a distinct profile of technology from the common characterization of the mobile-oriented student (EDUCAUSE, 2019) that may persist through the fall. No differences in access patterns were seen across demographic groups.

"I miss the in-person interaction with my classmates, being able to see both a slide presentation and a whiteboard at the same time, being able to ask a question of the person sitting next to me."
What technical and logistical challenges did students encounter?

Students described a variety of technical and logistical challenges ranging from tools that were “clunky” and prone to crashing to the difficulties of attending live sessions from distant time zones. The most common technical challenge was internet connectivity, with students reporting problems due either to slow connections or lack of access from a location that was appropriate for their studies. The latter was often connected to students’ new living situations, which didn’t always offer private or dedicated spaces to work. Several students noted that disparities in home environments can exacerbate existing equity issues in higher education: “Not all students have equal access to the internet, software, and resources…which creates educational inequities that have tangible outcomes in learning ability/grades/class performance and that fall along socioeconomic lines.” This was compounded for students who needed to take on additional responsibilities due to COVID-19, leaving them with limited time and focus for school. Even when students did have time to study, they described it being difficult to stay motivated and organized while staying at home all day: “My schedule is all messed up and I don’t feel like I work as efficiently.”

**LEARNING EXPERIENCE**

How did experiences after the shift compare to perceptions beforehand?

Students reported their overall learning experiences in Spring 2020 as slightly better than "neutral" (3.30) on a 5 point scale, a significant drop from their perception of their classes prior to the shift online as close to *mostly good* (4.47). The observed decrease was more pronounced for undergraduates (4.62→3.20) than for graduate students (4.47→3.47) and for women (4.65→3.25) than for men (4.40→3.52) (see Figure 2). No differences were found across field of study.

Did experiences change over time?

There was a notable rise in learning experiences reported over time with values lowest while the transition was occurring in March and increases seen as the situation stabilized in April and May (see Figure 3). This approaches the quality of learning experiences reported for prior online courses of "somewhat good" (3.78, see following section).
How do current experiences relate to prior online courses taken?

Over half (63%) of students surveyed had taken an online course previously, reporting an average learning experience of 3.78 with no differences across demographic groups. Students who had taken an online course before reported a slightly higher quality of experience for their current courses when they moved online (3.42) than those who had not learned online before (3.16) (see Figure 4).

Differences in quality of self-reported learning experiences based on prior online learning experience

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![Figure 4](image)

FEELINGS

How did students feel about the transition?

When asked to select one of six feelings spanning positive to negative affect and low to high activation (see Figure 5), the most common feelings students reported about their online courses were okay with it (31%) followed by resigned (25%). A substantial portion of students also described feeling upset (18%). Men followed this general pattern of feeling more okay (34%) than resigned (19%) with some expressing curiosity about what remote instruction would be like (11%), while women reported equal proportions of okay (30%) and resigned (29%) feelings and lower levels of curiosity (3%). These differences mirror the results for learning experiences reported earlier. Differences in feelings between undergraduate and graduate students also aligned with the learning experience results: graduate students expressed being more okay (41%) than resigned (19%), while undergraduates described the reverse (resigned 31%, okay 25%).

How did students' feelings about the transition change over time?

Shifts were seen in the feelings reported from the start of the transition to later periods of remote instruction. Initially a sizable proportion of students (24%) reported feeling nervous; however this number dropped dramatically once students had time to adjust to the situation (6% in the latter time periods). A corresponding rise was seen in the number of students who reported being upset (14%→21%) and those who were resigned (26%→31%) or okay with it (25%→30%). In the final time period there was dramatic shift towards students feeling okay with remote instruction (38%) as opposed to resigned to it (20%) (see Figure 5).

What other feelings did students experience?

When asked to describe any other feelings about the move online in their own words, many students reported feeling anxious. They were worried they...
would miss something or do poorly, frustrated that expectations weren't always reasonable, and often felt overwhelmed trying to balance work for multiple classes, and in some cases additional responsibilities at home. “[I am] anxious that I will miss a deadline with all of the extra factors in my life right now.” While many students accepted the situation and said they felt fine about things given the circumstances, there was still a sense of disappointment and "missing" of the experiences they had hoped to have; these primarily related to interpersonal interaction and connections with classmates: “I miss the in-person interaction with my classmates, being able to see both a slide presentation and a whiteboard at the same time, being able to ask a question of the person sitting next to me.” For some students, the shift online led to feelings of detachment and challenges in staying engaged: “It's hard to be motivated to work online” however for others it was a good fit and they reported that it was freeing to have flexibility around their courses increased: “[I now have] freedom of choice, time, interest, going back to topics for better understanding.”

"Professors usually only are adjusting to changes with classes that they teach, but students are doing five times as much adjustment in the same amount of time.”

**WHAT WORKED AND WHAT DIDN'T**

**What did students appreciate / find challenging?**

At a basic level, many students were pleased that their courses could continue, given the circumstances, and noted surprise at how quickly everyone managed to adjust, despite the abrupt nature of the change and need to learn on the fly. Many also appreciated the time they gained from not having to physically go to classes, finding it convenient to attend class from home and have greater flexibility in when and at what pace they studied: “It allows me more freedom to work ahead and be comfortable in my surroundings.” At the same time, one of the biggest challenges students described was how to engage and stay focused for the long periods of screen time required when all of their classes went fully remote at once. Many noted that without the natural rhythms and social environment of a physical location, more discipline was required, yet being online all the time also offered additional distractions. Having multiple courses go online at once additionally contributed to another challenge, staying organized across several different sets of tools, schedules and sets of expectations: “It is a lot at once…. professors usually only are adjusting to changes with classes that they teach, but students are doing five times as much adjustment in the same amount of time.”

**What was important to students about how professors handled the shift?**

By far the most important thing to students was that faculty adjusted the course and expectations for the shift online and that they offered flexibility to students who needed it. This was both the most highly praised quality of instructors who were seen to be doing well with the transition and the biggest critique of those who were not: “[My teachers are] doing a good job of realizing that this is difficult and making adjustments to the course so people cannot be too stressed as they’re making the transition.” Connected to this was appreciation for effort: students valued professors who they perceived as trying to provide high quality education and engage students interactively with the material (even if things didn’t always go as planned). Students were upset with those who didn’t seem to be making a real attempt to adapt, either by lecturing via videoconference for multiple hours straight without any interaction or not holding class at all: “I have two instructors who won’t even try Zoom, so they're sending us links to free YouTube videos to watch and write papers about.” Communication and a clear structure to follow was also highlighted by many students as especially critical in the online format: when done well students described it as helping them stay organized and feel connected; when lacking they often felt both lost and unsure where to turn for help. Beyond simple course mechanics, students appreciated the
care and concern many of their instructors showed, and their availability for consultation when it was needed: “Honestly, classes that were engaging beforehand remain engaging.” Finally, students noted that professors who were already using digital elements as part of their teaching had a dramatic advantage over others who were limited both by the hardware and software they had available and their ability to use them.

How well did lectures work online?

Opinions were divided about how well lectures worked online. Some students reported that they translated well online without requiring major changes, while others criticized courses that required students to show up “live” for a lecture that could have been sent as a recording. At the same time that some students wanted the flexibility to do schoolwork on their own schedule, others described asynchronous learning as unmotivating, preferring the structure of a set schedule. These contrasting findings may represent the diverse needs of different learners. One point of strong agreement was the value in having lectures recorded so students could review them when they wanted and have control in doing so: “Classes are all recorded so it’s easy to adjust based on time zone, slow down/speed up lectures, etc.”

How well did interaction work online?

Interaction was highly valued by students, but they were divided about whether it was working well online or not. Students generally praised instructors who included opportunities for this in their classes, saying that the online format worked better when this was possible. However, while some students found it easier to ask questions, noting the multiple channels available for doing so (chat as well as voice), a greater number found it harder to engage, noting the challenges of virtual turn-taking: “it can be uncomfortable to start talking because classmates or the professor might start talking at the same time.” A few students suggested that things might improve as everyone got more used to the technology and developed norms around claiming/ceding the floor.

In addition to in-class synchronous interaction, students noted two other related challenges: being able to connect with the professor or teaching assistant when you need help and informal interactions with classmates. For getting help from the instructor, students appreciated when virtual office hours were offered, but noted the challenges when multiple people with different questions showed up at once. Unlike the face-to-face situation in which multiple parallel conversations often take place, the (current) use of video-conferencing tools enforces a one-to-many format with only a single speaker at a time. The lack of informal interactions with other classmates was a critical dimension missing for many students online. They lamented the absence of the camaraderie of working on problem sets together and informal relationship building: “I miss human interactions, small talk before and after class. Now the entire socialization is cut off, we have sessions on time and leave the chat room right away.”

Where did remote learning struggle most?

Courses involving material that had a physical, visual, or auditory component (e.g. dance, art music, science lab work) were most commonly described as being the most challenging to move online, though several students noted difficulties for classes involving problem-solving (e.g., math, physics, engineering) as well. In the latter case, instructors were sometimes able to find ways to show worked-out examples, but the tools they used required the examples to be prepared ahead of time. Students also described group projects as particularly challenging to coordinate online, especially when students were distributed across different time zones.
What suggestions did students have?

Almost half (45%) of students surveyed had suggestions for making the online learning experience better. These ideas fell into three overlapping categories: pedagogy, remote technologies, and compassion (see Figure 6). Students wanted “clear instructions and open communication,” their instructors to be organized, and “access to videos or other materials outside of lecture time.” As students were dispersed to different time zones and frequently distracted by COVID-related considerations, many pressed for asynchronous delivery outside of the appointed class meeting time. Thus a sizable cluster of pedagogical suggestions had to do with communication, organization and online structure. Another cluster of suggestions related to active engagement, discussion, and social interaction, with recommendations to “invite participation from students...breakout rooms in zoom seem to help” and “open up discussion boards so we can ask and answer questions about material informally among ourselves.” Specific suggestions directed instructors to use remote technologies better, for example, by compelling students to have cameras on but remain muted while not speaking. Moderated chats, breaks, and higher production quality were also mentioned. While some students wanted to “make the online experience more like face to face,” others suggested that assignments needed to change from the way they were before. Students asked for more individualization as well as elimination of “busy work” and “unnecessary” assignments. Many specifically requested eliminating group projects, possibly because coordination efforts were higher than before the shift online. Just as for comments about what works and what didn’t, not all student suggestions pointed in the same direction. Some wanted pre-recorded lectures, some live sessions to be recorded for later, and others wanted lectures eliminated entirely.

Compassion, flexibility, and a human touch were among the most prominent suggestions. This included a relaxation of deadlines, reducing the quantity of material, as well as availability of the instructor at various times rather than fixed office hours. Students wanted access to a human being and to feel heard (“take our feedback!”). They tended to be a lot more forgiving about other problems when these needs were met.

Themes in student suggestions to improve remote learning

Figure 6
LIMITATIONS

The nature of a convenience sample precludes claims of representativeness to the full population of university-attending students in the United States. While no significant differences were found between students at the researchers’ institution and those from other schools, there may be variations in experiences of students at universities in different regions of the country, at public and private institutions, and (for undergraduates) those at 4- and 2-year colleges. Equally important, there is evidence the pandemic has a disproportionately detrimental effect on Black and Latinx students (Means, et al., 2020; New America & Third Way, 2020) as well as those less well-off socio-economically (Means et al., 2020; Stanford IRDS Office, 2020). The differential experiences and needs of these population should be considered in interpreting the general findings reported here.

IMPLICATIONS

The results of this study have direct implications for the design of remote learning experiences going forward. A key takeaway is to recognize where small changes can have a large impact. This includes providing students with clear organization and expectations for courses and offering opportunities for active and interactive engagement with content in live (synchronous) sessions. Active engagement can be supported by suitable technologies, including Zoom breakout rooms, collaborative editing tools (e.g., Google Docs), and group messaging tools like Slack. Both instructors and students will need time to familiarize themselves with these tools. Increased communication from instructors, both through regular messaging and availability for virtual office hours, is another change that can help students stay on track and feel connected.

Other areas of improvement are important but more challenging to achieve. Navigating students’ needs for flexibility and asynchrony must be balanced with helping them to stay motivated and to keep a regular schedule for their school work. Perhaps the most difficult goal, recognized as critical by both this study and others (Stanford, 2020; Means, 2020), is supporting informal interactions and connections among students. Success here will require both new technologies (current candidates include VR and spatial chat) as well as new social practices, as students and instructors alike renegotiate the ways we come together online.

REFERENCES


SUGGESTED CITATION


LEARN MORE

Watch Dr. Wise and Dr. Bergner discuss the results of the study:
- Video: tinyurl.com/CITCSpring2020
- Slides: tinyurl.com/CITCslides