The Effects of COVID-19 on Faculty in the College of Engineering at San Jose State University

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Abstract

This paper reports on a survey of all engineering faculty at San José State University (SJSU) in Spring 2020. The purpose of the survey was to determine the impact of the shelter-in-place on faculty. Overall, 104 faculty completed this survey. Based on the number of COE faculty in Spring, 287, this equates to a confidence level of 95% with a margin of error of 8%. Because of this low margin of error, we can be fairly confident that this survey is representative of the faculty teaching in the College in Spring 2020. The majority of the respondents who answered the question about rank were lecturers (58); there were fewer tenure-track (18), tenured (13), adjunct (1), and Teaching Associates (1) responding. Of the faculty who responded to identify their gender, 66 were men and 27 were women. It is interesting to note that there were more responses from newer faculty; 45.1% of the faculty responses were from faculty with five or fewer years teaching at SJSU. The responses of the faculty show that they worried about the health and well-being of their families, friends, and students. As well, they worried about doing their job well despite the changes made to classes when the classes moved 100% online. Most faculty (60%) took training to learn about online tools; the most common training was for audio or video conferencing tools, Canvas, controlled testing environments, and online videos or tutorials. The tools used by faculty after the shelter-in-place was different than before with in-person classes. More faculty used audio and video conferencing tools (90.6%), webcams (77.3%), online videos or tutorials (68.8%), and YouTube (50%). Faculty reported that students indicated they had issues with several digital technologies after the classes moved 100%. More than 2/3 of students have problems with Internet connectivity either always or sometimes during Spring 2020. Also, more than 50% of the students had issues with a physical space for studying and webcams.

Review of the Literature

In Spring 2020, after COVID-19 forced most colleges and universities to change quickly to 100% online instruction, the Higher Education Data Sharing Consortium (HEDS) surveyed students, faculty and staff across the U.S [1] about their experiences. 4,000 faculty from 28 different colleges and universities participated in this study that assessed responses from faculty in four areas: Worries and stress, experiencing a lack of control, communication and support from their institutions, and factors that impacted their stress and worry. The HEDS survey found that over 50% of faculty worried often or very often in six of the eleven areas in the survey. The results were that faculty worried about

- Health and well-being of your students (75% of faculty)
- Health and well-being of your friends and family (74% of faculty)
- What the future holds for this institution (70% of faculty)
- Doing your job effectively despite changes in work environment (56% of faculty)
- Health and well-being of your colleagues (52% of faculty)
- Your health and well-being (51% of faculty)

The HEDS survey also asked faculty about stress related to the spread of COVID-19. In this question, faculty reported higher stress levels than staff—45% of faculty reported some stress while 49% of faculty reported a great deal of stress. Faculty also noted that they felt overwhelmed by work and felt the pressure from deadlines with more faculty reporting that they often or very often felt overwhelmed. Specifically, 61% of faculty felt they had too many things to do, 55% felt that they were in a hurry, and 51% felt under pressure from deadlines. This result agrees with a study conducted by *The Chronicle of Higher Education* [2]. *The Chronicle* survey included responses from 1,122 faculty at 2-year and 4-year institutions. *The Chronicle* survey found that the levels of stress among faculty had increased dramatically when compared to a prior survey in 2019. 69% of faculty in Fall 2020 reported feeling extremely or very stress compared to only 32% in 2019. The increased stress levels appear to lead to faculty feeling overwhelmed: 74% of women faculty and 63% of men faculty reported that their work-life balance had deteriorated and 82% of women faculty and 70% of men faculty reported that their workloads had increased.

Tyton Partners, in conjunction with *Every Learner Everywhere* [3] completed another survey of faculty. This survey targeted faculty in 2-year and 4-year institutions. 4,798 faculty from over 1,500 institutions responded to this survey (1,102 from 2-year and 3,623 from 4-year institutions). They found that 91% of faculty transitioned their in-person courses to online in Spring 2020. Of these faculty, less than half had taught online before. The most significant challenge that faculty had was engaging and motivating students after the move online (63% of faculty at 2-year and 60% of faculty at 4-year institutions). This agree with the students who responded to an ASEE study of engineering faculty, administrators and students [4]: 61% of the students in the ASEE study agreed with the statement "It is difficult to remain engaged and motivated while working/studying from home."

The Tyton Partners survey [3] also found that faculty who used a wider range of instructional techniques were more satisfied with the student learning in their now-online classes. This finding was replicated in the *Suddenly Online* study by Digital Promise and Langer Research Associates [5] which surveyed a randomized nationwide sample of 1,008 undergraduates, 717 attending four-year colleges and 271 attending two-year colleges, whose classes were converted from in-person to online after the COVID-19 pandemic hit. The *Suddenly Online* study by Digital Promise and Langer Research Associates study found that student satisfaction dropped after the move online. 51% of students were very satisfied with their course pre-COVID-19. This number dropped to only 19% of students saying they were very satisfied after the move online.

The Tyton Partners study [3] found that most faculty had never used video conferencing tools before the move online: the survey reported that only 21% of faculty had used video conferencing before COVID-19. An additional 49% of faculty started using video conferencing after the courses moved online.

There are few studies that assessed the experiences of engineering faculty. The Tyton Partners study [3] looked at science, technology, engineering, and math (STEM) faculty because these faculty had unique experiences compared to faculty in general. 46% of STEM faculty in the survey taught a course with a lab component, taught introductory courses (70%), taught large classes with over 100 students (40%) and taught gateway classes (70%). STEM faculty had

difficulties transitioning courses with a lab component to a 100% online environment. The survey reported that STEM faculty made these adjustments to their lab courses in Spring 2020: worksheets or readings for students to learn the material (49%), simulations (42%), YouTube or publicly available labs for students to watch (31%), held live labs over video conferencing (26%), implemented distant in-person labs (13%) and eliminated the labs from the class (11%).

ASEE conducted a survey of more than 207 faculty, administrators and students in June and July 2020 [6]. This study also found that the loss of lab and hands-on instruction was the leading problem faced in engineering because of the move online due to COVID-19 with 120 of the respondents mentioning this issue. Another university similar to SJSU, CSU Long Beach, conducted a survey of engineering after the move online in Spring 2020 [7]. They received completed surveys from 110 faculty and 627 students from six engineering departments at CSU Long Beach. The researchers found that faculty had several challenges with the online instruction during Spring 2020.

> "Close to 15% of the faculty had issues with software license or no access to personal computer/tablet. About 20% of the faculty did not have access to microphone/headset or printer/scanner. 23% of faculty had no reliable internet connection, while 32% had no access to webcam or camera for the online instruction. Finally, 47% of the faculty indicated that they had no access or technical difficulties with online writing tools" [7, p. 3].

Computer Science faculty were surveyed in June 2020 by Bizot et al [8]. 450 faculty responded to the survey which had been distributed to the Computing Research Association (CRA) and the ACM Special Interest Group on Computer Science Education (SIGCSE) mailing lists. The faculty reported that they changed their pedagogical techniques after the move online. Before moving online, 250 faculty had used active learning in their classes. After moving online, 34.9% discontinued active learning, 43.4% made minor changes and 21.3% made significant changes. Collaborative projects and labs were also impacted by the move online. Of the 180 faculty who used collaborative projects, 13.9% discontinued them, 71.7% made minor changes, and 14.4% made significant changes. Of the 166 faculty who had courses with a lab component, 9.1% discontinued the lab, 64.6% made minor changes and 26.2% made significant changes. The faculty also reported more concerns about academic integrity issues: 23.1% of the faculty observed more integrity issues than under normal circumstances after the move online.

The Computer Science faculty felt higher levels of stress in shifting online. When asked if shifting to online teaching was difficult and stressful, 24.8% strongly agreed and 41.6% agreed. Most faculty reported challenges while teaching online. 74.6% of faculty felt it was hard to implement their preferred teaching style and 65.6% of faculty felt that it took a lot more time teaching than in a normal semester.

Methodology

The results in this paper are part of a larger study completed at SJSU which looked at the impact of COVID-19 on students and faculty. For the faculty survey in this study, we looked at the questions that were developed by the researchers at HEDS [9] to develop our own faculty

survey. We also used similar items to the Georgetown survey of students [10, 11] as we developed our survey. The survey was reviewed by the Associate Dean of Engineering at SJSU.

Research Questions

1. What are the impressions of faculty to the learning environments in engineering courses after the switch online in Spring 2020?
2. How is stress/anxiety contributing to teaching at SJSU because of the abrupt shift from in-person learning to online learning due to COVID-19?
3. What was the impact of the switch online in Spring 2020 to project based classes and lab classes?

The SJSU team submitted an IRB application and it was approved on 5/28/20. According to the Spring 2020 SJSU numbers of faculty in the College of Engineering, there were 287 faculty, lecturers, tenure-track and tenured faculty. The researchers sent an email to each faculty member using the College's lists in Google Groups. The first email with the survey was sent on 6/1/20 with follow-up emails on 6/7/20, 6/15/20, 6/21/20, and 7/3/20.

Demographics

Overall, 104 faculty completed this survey. Based on the number of COE faculty in Spring, 287, this equates to a confidence level of 95% with a margin of error of 8%. Because of this low margin of error, we can be fairly confident that this survey is representative of the faculty teaching in the College in Spring 2020.

The majority of the respondent who answered the question about rank were lecturers (58); there were fewer tenure-track (18), tenured (13), adjunct (1), and Teaching Associates (1) responding. Of the faculty who responded to identify their gender, 66 were men and 27 were women. It is interesting to note that there were more responses from newer faculty; 45.1% of the faculty responses were from faculty with five or fewer years teaching at SJSU. Before Spring 2020, only 26 of the 88 faculty responding had taught a course online. Of the faculty who previously taught online, only 7 had taught online five or more years.

Figure 1. Years teaching at SJSU of Faculty Responding to the Survey

| Answer	Count	Percent
0-5 years	41	45.1%
6-10 years	15	16.5%
11-15 years	12	13.2%
more than 15 years	23	25.3%

Faculty from every department in the College responded to the survey. The survey respondents were generally representative of the faculty in the College of Engineering (department data gathered from the Institutional Research (IEA) website). The total number of faculty is higher than for the college overall as faculty teaching in more than one department will be counted

multiple times. Comparing the IEA data with the survey respondents, faculty in Computer Engineering were over-sampled and faculty in Civil and Environmental Engineering were under-sampled. 48.9% of the faculty did not work outside of SJSU in Spring 2020 (see Figure 3). However, a high number, 27, of faculty worked full-time outside of SJSU in Spring 2020.

Figure 2. Comparison of Institutional Research (IEA) Faculty Numbers to Survey Respondents

	Spring 2020 IEA		Survey Responses	
Department	**Number**	**percent**	**Number**	**Percent**
Aerospace Engineering	15	4.9%	8	8.0%
Aviation and Technology	41	13.5%	11	11.0%
Biomedical Engineering	10	3.3%	3	3.0%
Chemical and Materials Engineering	26	8.6%	5	5.0%
Civil and Environmental Engineering	30	9.9%	15	15.0%
Computer Engineering	63	20.7%	12	12.0%
General Engineering	33	10.9%	16	16.0%
Industrial and Systems Engineering	21	6.9%	6	6.0%
Mechanical Engineering	35	11.5%	11	11.0%
Electrical Engineering	30	9.9%	13	13.0%
Total	304		100	100%

Figure 3. Responses to the question: In addition to being a lecturer in the College of Engineering at SJSU, what is your other work environment?
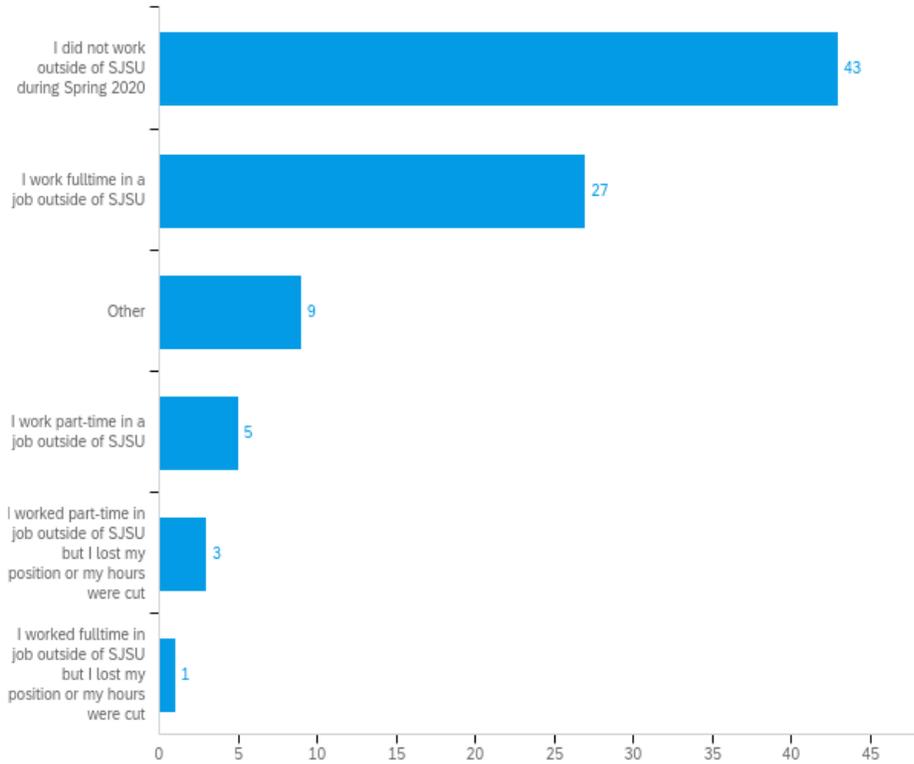
Living Conditions

Several faculty members (29 responses out of 92 responses) are living with someone over the age of 65 or who has a risk factor for COVID-19. 34% of faculty either had to care for children or elderly either full-time or part-time during the shelter-in-place in Spring 2020.

Several faculty members reported difficulties in traveling (22 faculty), changes in their living situations (5), and adverse discrimination (2) since the shelter-in-place in March 2020. With respect to all three of the five questions relating to different aspects since the shelter-in-place, faculty reported that their ability to socialize with peers (89.5%), ability to socialize with friends (91.9%), time management (43.2%), and overall psychological well-being (47.7%) was worse or much worse since the shelter-in-place began. Most faculty reported feeling more stress as a result of COVID-19 (see Figure 4).

Figure 4. Responses to the question: Overall, how much stress are you feeling about the consequences of COVID 19?
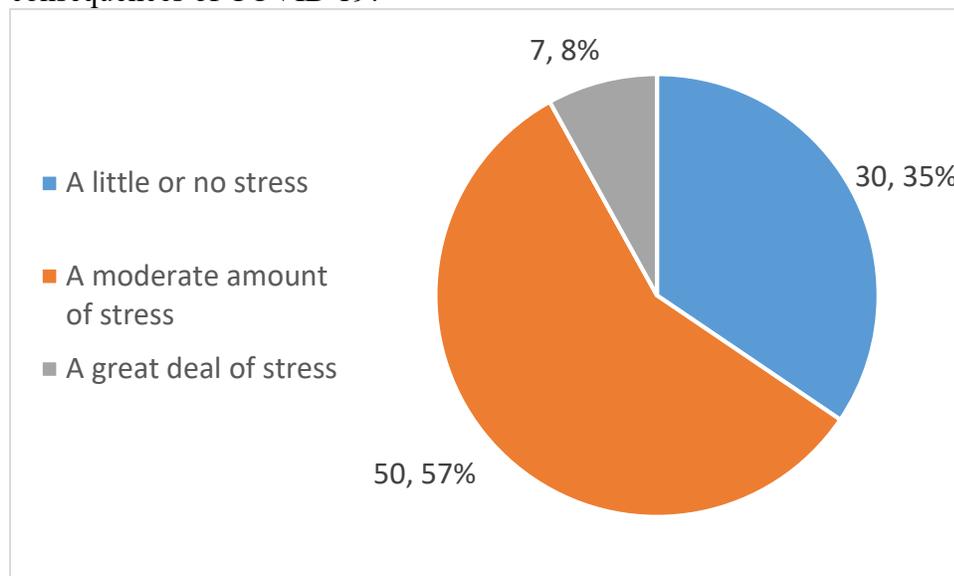
31 faculty members added comments about their quality of life. As Figure 5 shows, the most common words mentioned were work, home, and stress. Some of the faculty comments are below. All of the faculty open-ended responses are in the Appendix.

> "Spending all my time on the computer, dealing with email and Zoom meetings, is draining. There were a lot of additional workloads to put together a strong online class in addition to extra administrative workload and stress."

> "Making the change in pedagogy with little notice and not being able to do anything about mine or student's issues with the internet, or feelings of isolation, lack of

engagement, etc. and inadequate communication from all SJSU leaders regarding the COVID situation added a lot of stress."

"During the semester, I felt completely stretched thin. Everything was a tradeoff between taking care of myself and fulfilling my responsibilities. I frequently felt like I was failing at both."

Figure 5. Word Frequency from Comments to the Question: Please help us understand the diversity of experiences by sharing any further information on your quality of life here.

Faculty reported that both their expenses (41%) and their income (20.7%) had decreased since the shelter-in-place. The survey showed that faculty worry about several things since the shelter-in-place. We asked faculty to respond to about five areas (see Figure 6). The responses of the faculty show that they worried about the health and well-being of their families, friends, and students. As well, they worried about doing their job well despite the changes made to classes when the classes moved 100% online.

Figure 6. Faculty Responses to the Question: Given the changes in your classes in Spring 2020 and the shelter in place, how often do you worry about the following?

Question	Never		Sometimes		About half the time		Most of the time		Always		Total
Doing your job well despite changes to the way your courses are taught	11.5%	10	31.0%	27	13.8%	12	29.9%	26	13.8%	12	87
Loss of connection to faculty peers at SJSU	19.8%	17	43.0%	37	15.1%	13	17.4%	15	4.7%	4	86
Your health and well being	16.1%	14	47.1%	41	14.9%	13	16.1%	14	5.7%	5	87
The health and well being of your family and friends	6.9%	6	41.4%	36	20.7%	18	19.5%	17	11.5%	10	87
The health and well being of our students	1.1%	1	46.0%	40	14.9%	13	24.1%	21	13.8%	12	87

Most faculty (64.8%) generally felt that they had everything under control although they also felt that there was too much to do in their classes (55%) and they were under pressure from deadlines in their courses (48.9%). All of the responses to this question are shown in Figure 7 below.

Figure 7. Faculty Responses to the Question: Since SJSU made the decision in March 2020 to move to 100% online instruction, how often have you:

Question	Never		Sometimes		About half the time		Most of the time		Always		Total
Had too much to do for your courses	14.9%	13	29.9%	26	21.8%	19	23.0%	20	10.3%	9	87
Felt you were in a hurry	18.2%	16	35.2%	31	12.5%	11	19.3%	17	14.8%	13	88
Felt you were under pressure from deadlines	18.2%	16	33.0%	29	15.9%	14	19.3%	17	13.6%	12	88
Felt that work was piling up so high that you could not finish it	31.8%	28	30.7%	27	12.5%	11	15.9%	14	9.1%	8	88
Felt that you had everything under control in your classes	9.1%	8	26.1%	23	14.8%	13	36.4%	32	13.6%	12	88

Most of the faculty, almost 80%, who responded to the survey taught either one or two classes for the College of Engineering in Spring 2020.

Pedagogy

We were interested in seeing how many faculty had ever used active learning in their in-person courses. Despite increasing research on active learning, the teacher-centered lecture model still persists in STEM fields [12, 13, 14, 15]. Although the number of faculty using active learning (or student-centered) methods has increased in the last ten years, the Higher Education Research Institute survey of faculty in 2013 showed that half (50.6%) of faculty use a lectured-based

classroom instead of active learning [16]. The number of engineering faculty using active learning is lower than in other fields: a national survey of engineering faculty [17] found that only 47% of engineering professors use active learning in their classrooms. Indeed, Lord and Camacho [18] found that most teaching-oriented engineering faculty know there are problems with lecture-based instruction; yet 60% of them still teach that way.

The results of this survey showed that most faculty (62 out of 88) used active learning in their in-person classes. Also, most faculty (60%) took training to learn about online tools; the most common training was for audio or video conferencing tools, Canvas, controlled testing environments, and online videos or tutorials. Figure 8 displays the most common active learning pedagogies used by the faculty survey respondents. Most faculty were satisfied with the support they received from SJSU after the shelter-in-place with 63% of the faculty indicating that they were moderately or extremely satisfied with the support.

Figure 8. Faculty Responses to the Question: What active learning pedagogies have you used in your classes?
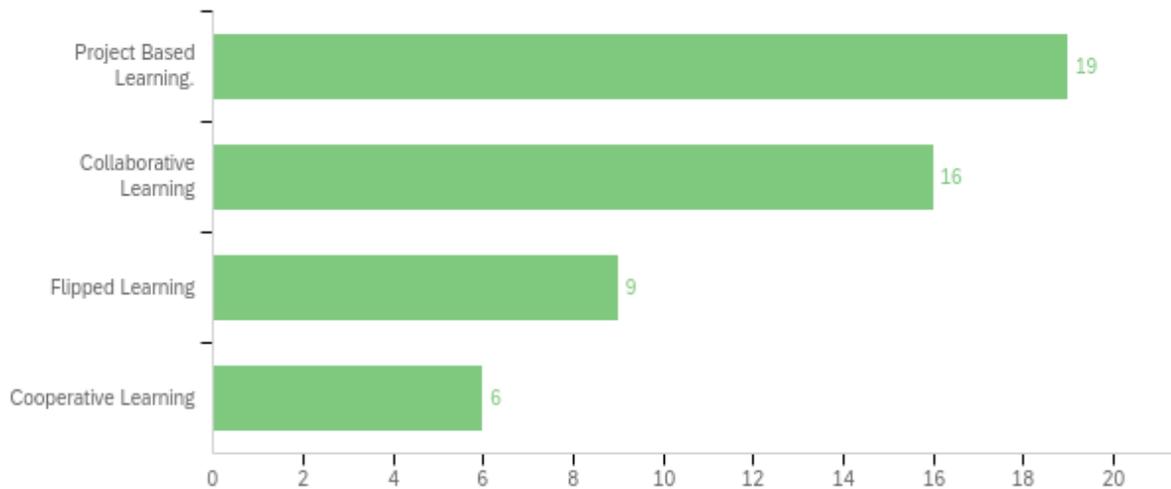
Faculty reported using a wide variety of online tools since the move online in March 2020. Not surprisingly, before the shelter-in-place, almost all faculty used Canvas and online videos and tutorials in their in-person courses (see Figure 10).

Figure 10. Online Tools that Faculty Have Used in their In-person Classes

Tools	Never Use		Sometimes Use		Always Use		Sometimes & Always Use	
Canvas	3	4.4%	2	2.9%	64	92.8%	66	95.7%
Online videos or tutorials	9	13.6%	38	57.6%	19	28.8%	57	86.4%
YouTube	14	21.2%	36	54.6%	16	24.2%	52	78.8%
Collaboration tools (Google Docs or other collaborative tools)	21	35.6%	30	50.9%	8	13.6%	38	64.4%

Audio or video conferencing tools (Google Hangout, Zoom, Microsoft Teams, etc.)	23	37.7%	15	24.6%	23	37.7%	38	62.3%
Real-time polls	26	41.9%	28	45.2%	8	12.9%	36	58.1%
Discussion Boards	27	43.6%	24	38.7%	11	17.7%	35	57.4%
Text-based chat	31	53.5%	21	36.2%	6	10.3%	27	46.6%
Controlled online testing environments (ProctorU. Proctorio, Lock Down Browsers, etc.)	40	63.5%	15	23.8%	8	12.7%	23	36.5%
Video editing software	43	70.5%	17	27.9%	1	1.6%	18	29.5%
Digital whiteboard apps (Names)	47	75.8%	8	12.9%	7	11.3%	15	24.2%
Podcasts	53	94.6%	0	0.0%	3	5.4%	3	5.4%

The tools used by faculty after the shelter-in-place (Figure 11) was different than before with in-person classes (Figure 10). More faculty used audio and video conferencing tools (90.6%), webcams (77.3%), online videos or tutorials (68.8%), and YouTube (50%).

Figure 11. Online Tools that Faculty Have Used in their Online Classes after the Shelter-in-place

	Yes, tool used		No, tool not used		Sometimes		Not needed		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Canvas	80	96.4%	3	3.6%	0	0.0%	0	0.0%	83
Audio or video conferencing tools (Google Hangout, Zoom, Microsoft Teams, etc.)	77	90.6%	7	8.2%	0	0.0%	1	1.2%	85
Webcam	58	77.3%	10	13.3%	2	2.7%	5	6.7%	75
Online videos or tutorials	55	68.8%	13	16.3%	5	6.3%	7	8.8%	80
YouTube	39	50.0%	18	23.1%	13	16.7%	8	10.3%	78
Text-based chat	37	49.3%	21	28.0%	9	12.0%	8	10.7%	75
Collaboration tools (Google Docs or other collaborative tools)	35	46.7%	23	30.7%	9	12.0%	8	10.7%	75
Controlled online testing environments (ProctorU. Proctorio, Lock Down Browsers, etc.)	37	45.7%	27	33.3%	7	8.6%	10	12.4%	81
iPad or tablet	32	42.1%	32	42.1%	5	6.6%	7	9.2%	76
Real-time polls	32	42.1%	28	36.8%	7	9.2%	9	11.8%	76
Scanner	30	41.1%	31	42.5%	7	9.6%	5	6.9%	73
Discussion Boards	28	35.9%	29	37.2%	8	10.3%	13	16.7%	78
Digital whiteboard apps (Names)	26	34.7%	33	44.0%	3	4.0%	13	17.3%	75
Video editing software	19	26.0%	37	50.7%	6	8.2%	11	15.1%	73
Document camera	15	20.8%	42	58.3%	2	2.8%	13	18.1%	72

| Podcasts | | 3 | 4.3% | 46 | 65.7% | 2 | 2.9% | 19 | 27.1% | 70 |

Faculty responses were mixed when we asked them about concerns related to privacy and security of online tools with 44.6% indicating they were concerned, 42.2% indicating that they were not concerned, and 13.2% indicating they were unsure. Most faculty spent more hours than usual on course preparation after the shelter-in-place with 70.4% reported spending more time. The additional hours spent by faculty are significant as shown in Figure 12.

Figure 12. Faculty Responses to the Question: How many more hours did you spend on course preparation after the move to 100% online instruction as compared to before for your average class?
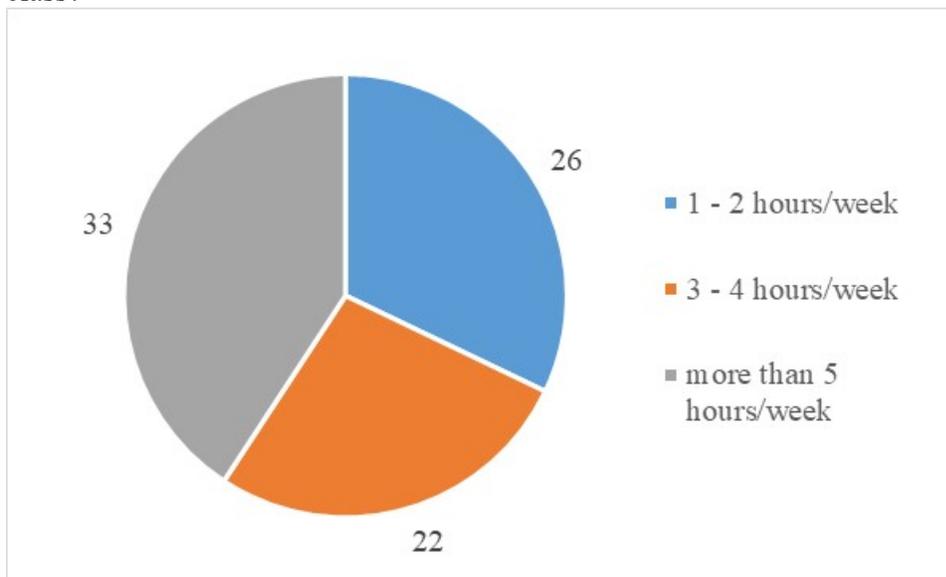
Student Experiences

Faculty reported that students indicated they had issues with several digital technologies after the classes moved 100%. More than 2/3 of students have problems with Internet connectivity either always or sometimes during Spring 2020. Also, as can be sent in Figure 14, more than 50% of the students had issues with a physical space for studying and webcams.

Figure 13. Faculty Responses to this Question: Have your students indicated that they have issues with access to any of the following after the move to 100% online instruction in March 2020?

Issues for students	Yes	Sometimes	Yes + Sometimes		No		Not needed		Total
Enough Internet Access for doing your classwork online	32	22	54	67.5%	26	32.5%	0	0.0%	80
Physical space for studying and doing assignments	26	14	40	50.6%	38	48.1%	1	1.3%	79
Webcam	23	17	40	51.3%	34	43.6%	4	5.1%	78

Computer, laptop or tablet	16	16	32	40.0%	48	60.0%	0	0.0%	80
Library resources (including books, articles, etc)	14	5	19	25.3%	53	70.7%	3	4.0%	75
Scanner	10	2	12	16.2%	50	67.6%	12	16.2%	74
Printer	6	8	14	18.2%	48	62.3%	15	19.5%	77

Summary

Since most students and faculty had originally been in face-to-face classrooms, the stresses of online learning surely contributed to changes in faculty workload, student learning and the overall learning environment. It is more challenging to create a cohesive learning environment online that leads to meaningful learning when faculty have little experience in this mode [19]. There has been extensive research done on effective teaching practices in online classrooms. According to Sun and Chen [20], "effective online instruction is dependent upon 1) well-designed course content, motivated interaction between the instructor and learners, well-prepared and fully-supported instructors; 2) creation of a sense of online learning community; and 3) rapid advancement of technology." Since faculty had little time to design their online courses for the switch in Spring 2020, one can hope that institutions will offer training and support for faculty to improve their online presence for the Fall 2020 semester and beyond.

The research also documents that successful course completion is lower in online courses than in traditional face-to-face courses [21]. Both course completion rates and withdrawals are worse in STEM courses [22], particularly in lower level STEM courses [23]. A lack of engagement and lower successful completion rates have been shown in online physics courses [24] as reported by Murphy and Stewart. Murphy and Stewart used eight years of data with 3,032 students to compare face-to-face lecture courses with three semesters of a hybrid course with online lectures and face-to-face laboratories. They found that there was a 11% lower successful completion rate (A/B/C) for students in the hybrid course compared to the solely face-to-face course. These findings in STEM courses are not promising for continued instruction online in the upcoming semesters under the COVID-19 epidemic.

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Appendix

Open-ended responses to the question: Please help us understand the diversity of experiences by sharing any further information on your quality of life here.

I average about 2 hours less sleep each night since March. I believe the cause is mostly due to persistent stress and a lack of socializing and variety in my life.

During the semester, I felt completely stretched thin. Everything was a tradeoff between taking care of myself and fulfilling my responsibilities. I frequently felt like I was failing at both.

I used to sleep at my parent's house for 3 nights a week when I had in-person classes. This gave me a place to work on my classes without disturbances. At my home, there are many more distractions, plus my wife works night shifts on different days each week, which contributes to my sleep problems.

My parents are both in their late 60s, so I stopped seeing them as soon as I knew the virus was in YY They have both lost their jobs. I am concerned about both their health and their finances.

The teaching format changed but the students and I adjusted fine.

Now I have more time to read.

Having little to no physical contact from friends is more taxing than I thought it would be. I also worry about my grandmother so taking risks to travel is extremely depressing. I stay home and eat a lot of my own feelings

My husband has had "mild cognitive impairment" for some time, but his capabilities are diminishing more rapidly now, possibly as a side effect of our having less contact with the outside world as we "shelter in place." This has had a negative effect on my "quality of life."

New normal.

It has been beneficial in terms of commuting traffic. Don't care for Zoom versus face to face lectures.

I and my family took these challenges and turn into opportunities.

My children are effectively adults although they are living at home, so no worries there. My wife and I can work from home (at opposite ends of the dinner table), and we adapted to being home pretty well. There was a week where I had a bit of an identity crisis because part of my identity was being at work. Then I felt pretty good because I was prepared to teach online based on some prior work. My course and the courses I manage, transitioned pretty something to online. It has been nice being with the family more.

Right now, I am pretty angry/anxious/helpless that the university is taking too long to open up for research that cannot be done remotely. The top-down approach is a bit humiliating in that they think we do not know how to operate in a safe manner, or somehow not to be trusted. I am not saying their goal is to be humiliating, but it is.

I miss interacting with my students in person. I still stay in touch with them via email, and text messaging.

We have to minimize in-person contacts. When my friends stopped by to visit me, we met in the garden although we have not met in 35+ years. There is no visitation from local friends or family members.

With two young kids at home, it is impossible to work.

I feel I am on call 24/7 and it is difficult to take a break. Summer is the time I revamp my courses, work on educating myself, and other personal development routines. However, because I feel that I am on call 24/7 I am unable to do those.

It adds a tremendous burden to stay safe and up to date on top of the added workload to adapt teaching/research and on top of the regular workload.

Seeing the discussion of furloughs and seeing colleagues in the industry still getting bonuses and additional compensation or time off because of their higher workloads makes me feel even more disappointed that faculty aren't compensated for our work. It makes me feel like if we don't have superior job security, what do we have?

Not being able to travel.

Uncertain future as to when this will end.

Spending all my time on the computer, dealing with email and Zoom meetings, is draining. There were a lot of additional workloads to put together a strong online class in addition to extra administrative workload and stress. But overall it has been pretty smooth for me.

I have been spending my days zooming instead of meeting with people face-to-face. While I find meeting with people face-to-face is refreshing, zooming is exhausting. In addition, the inability to travel has hampered my ability to participate in conferences, visit my family, and take a vacation, which will have to wait until things get better.

Trying to help my family member to babysit my grandson, I am staying at my daughter's house. I had water damage on my MacBook, I still could not get it fixed. To teach courses, do research, and work on the NSF SJSU proposal I purchased a new MacBook which took several weeks to arrive, and I borrowed my relatives' MacBook. It took me a while to reinstall all software needed and till now still keep installing the Software needed.

A lot of my work has been forecasting ... I've been saying the world is entering a period of epochal change. I see Covid-19 as the gateway to the complexities and difficulties ahead, the first of many crises. We've crossed a critical boundary. None of this is surprising to me, but what has surprised me somewhat is the degree to which we (humanity, and particularly the US) have not adapted very intelligently. At best we are just coping (at SJSU, I think pretty well) ... e.g., turning to Zoom so strongly. However, I don't see much in the way of using this crisis to become more cooperative or build better arrangements; we are still too wedded to prior arrangements, and this troubles me.

I am fortunate to be able to continue working.   I am sheltered-in-place with my elderly mother and am her primary caregiver.

Our normal routines have been upended. Work at home and online lecture arrangements create additional stress. Further adding to the stress is the lack of recreational opportunities and childcare challenges.

Losing a relative due to respiratory disease was painful.

I've experienced less work-related stress. This might be attributed to working from home and not getting constantly interrupted by others.

Not much change

It has been extremely difficult to maintain the normal pace and responsibilities of this job while caring for two young children full-time at home. After mid-March, there was no childcare available for either, and we as faculty were expected to continue making progress, meeting deadlines, and fulfilling all our normal job responsibilities as if nothing had changed.

I am not happy about staying home all the time.

The primary concern is the potential loss of a job, the long-term impact on the economy, and, for those who are leaders, the pressure that comes from reducing our Teams.

My child is a 10-year-old only child and quite gregarious. Helping my child to keep spirits up has been difficult particularly since my parent had to spend 8 days in the hospital (non-coronavirus-related), which put a strain on all four of us: my parent, my child, my spouse, and myself.

Trying to maintain the family's well-being, keep my ADHD child on track with schoolwork, and manage my own classes was exceedingly difficult and overwhelming.

Making the change in pedagogy with little notice and not being able to do anything about mine or student's issues with the internet, or feelings of isolation, lack of engagement, etc. and inadequate communication from all SJSU leaders regarding the COVID situation added a lot of stress.

Especially different people communicating info at irregular days/times and some not communicating almost at all. In contrast, state and national leaders were giving out information on regular days/times. The attitude of most leaders at SJSU was more like don't contact me. Lack of information and where to get information, and what was allowed or not added stress.

There are stress and extra time related to taking on chores for elderly parents (in their 90's) to minimize their exposure. There is also extra stress helping our grad students (particularly where I am the thesis advisor) finish their degrees due to the disruption of experiments. So, I will be working over the summer with many of them to try to graduate in August. And.. of course, the university is providing no extra support for them or me in terms of resources or compensation.

Teaching over Zoom was stressful at times due to a flaky Internet connection. I also missed watercooler conversations with colleagues.