

Impact of Emergency Remote Teaching on University Students at a Public Institution in the United States

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The educational experiences of university students participating in Emergency Remote Teaching (ERT) during the COVID-19 pandemic were evaluated using a survey instrument. Students found ERT stressful (89%) and indicated challenges from inadequate internet (91%), lack of privacy (45%), and increased amount of studying (3 hours more per week). Academic rank correlated with stress level during ERT, with freshmen (42%) reporting the highest stress level and seniors (48%) reporting minimal stress. Lack of face-to-face instruction, missing peer interaction and having to teach the course material to themselves were the top issues that students disliked with ERT. Respondents recognized the need for organization, self-motivation, and increased interaction with other students and instructors as key factors for effectiveness and satisfaction of ERT instruction.

Keywords: emergency remote teaching, COVID-19, online teaching, university student education

INTRODUCTION

The global pandemic of COVID-19 forced higher education institutions across the United States to shift to online-only education, specifically known as Emergency Remote Teaching (ERT). The first university to make this shift was the University of Washington, who cancelled all in-person classes on March 6, 2020 (Thomason, 2020). Less than one week later, the World Health Organization designated COVID-19 as a global pandemic (Adhanom, 2020). Clemson University in South Carolina made the decision to temporarily move all classes to online instruction after Spring Break at the end of March 2020. However, administrators

decided to continue ERT for the remainder of the spring semester and into the summer. This included all undergraduate and graduate courses held on the main campus and at university facilities across the state. With little time to adjust to the pandemic induced ERT, students and faculty were required to relocate from campus and prepare for a different modality of teaching and learning.

While online courses have grown in popularity over the last couple of decades, most university students had limited experience with online classes prior to 2020 (Means & Neisler, 2020). Additionally, the sudden switch to online instruction due to a crisis or disaster, such as the case for ERT, is very different from the typical online, well-planned learning experience (Hodges et al., 2020). Traditional online course design, development, and delivery often entails months of cross-functional teams working together to create engaging and innovative learning experiences (Means & Neisler, 2020; Hodges et al., 2020). Time constraints and limited resources are just a couple of the many challenges faced from ERT.

Although the fall semester of 2020 began as scheduled in August, Clemson University delayed in-person instruction until the end of September. Like other institutions, mandatory masks, social distancing, classroom capacity restrictions, and ongoing COVID-19 testing have continued into 2022. Most of the instructors at Clemson University continued to utilize asynchronous or synchronous formats of online delivery until the end of the year in 2020, while others chose a more blended or hybrid approach, mixing face-to-face interactions with online instruction. Still, the quick turnaround, lack of experience in remote teaching and learning, and the varying needs of students and faculty are important to note when studying the effectiveness of online instruction from the student's perspective. The objective of this study was to understand first-hand experiences of students with online instruction during the fall semester of 2020 at Clemson University with the goal of providing recommendations to improve the quality of ERT in the future.

METHOD

In this study, the population was randomly selected students at Clemson University in South Carolina enrolled in classes in the Spring and Fall semesters of 2020. To qualify for selection, students had to be enrolled in both semesters. Students received a web-based survey distributed by the Office of Institutional Effectiveness and Assessment who creates survey sample groups with Institutional Research so that students are not surveyed multiple times in a semester. The survey was administered using Qualtrics online software. The survey consisted of 42 questions, divided into four domains: academic, technology, lifestyle, and demographics. An email with the description of the study and a link to the online survey on Qualtrics was sent to a random sample of approximately 4,000 eligible undergraduates and graduate students, age 18 and older, who were enrolled in at least one course at Clemson University during the fall semester of 2020 and in the spring semester of 2021. This number of students accounts for approximately 15% of Clemson University's student population (Clemson, 2022). This email emphasized that students' participation in the study was voluntary and confidential, and those who would wish to participate could access the link in the email to complete the survey. The survey was approved by the Institutional Review Board (IRB2020-366) before being disseminated. Participants had access to the survey for two months to facilitate a larger survey response. Responses to the survey were automatically recorded via Qualtrics survey software. Data were then exported via an Excel file and imported to SAS® OnDemand for Academics for analysis. For questions that had open-ended responses, common themes were determined, and answers compiled for analysis.

RESULTS

The surveys were completed between January 25 and March 21, 2021. A total of 538 responses were collected with a voluntary response rate of 13%. The survey had a completion rate of 95%, and the median time to complete the survey was five minutes. Responses were collected and analyzed using descriptive methods. Statistical significance was determined at a 5% level.

Student Demographics

Among the 538 respondents that completed the demographics questions, 36% identified as male while 61% identified as female (TABLE 1). Three percent of the respondents identified as either transgendered, gender variant/non-conforming, “prefer not to answer,” or other. While a majority of respondents (83%) identified their race as white, approximately 10% of students considered their ethnicity to be either some Hispanic, no/a/x or Spanish origin or another race, ethnicity, or origin. Furthermore, 6% of the respondents were Black or African American and 5% of the respondents were Asian (TABLE 1). Sixteen percent of the students that were surveyed were transfer students, 12% were Bridge students¹, and 13% were members of the Clemson University Honors² college. Bridge students are a subset of transfer students at Clemson University. There was an even distribution among the different colleges represented, with the College of Engineering, Computing and Applied Sciences representing slightly more respondents (21%) than the other six colleges (TABLE 1). The College of Agriculture, Forestry and Life Sciences had the highest rate of participation based on percentage of the total student population. Most respondents (76%) held between a 3.0 to 3.99 grade point average on the scale of 4. The distribution of students’ classification was 8% freshman, 33% sophomore, 41% junior, 17% senior, and 1% graduate student compared to the overall distribution for the university of 15.3%, 19.2%, 18.4%, 26.1% and 19.9% for freshman, sophomore, junior, senior, and graduate students, respectively.

TABLE 1
DEMOGRAPHICS OF CLEMSON UNIVERSITY STUDENTS RESPONDING TO SURVEY
QUESTIONS ABOUT THE IMPACT OF EMERGENCY REMOTE TEACHING

Variable	Respondents		University
	n	%	%
Gender Identity (n= 391)			
Male	142	36	48.4
Female	238	61	51.6
Transgendered Female	0	0	
Transgendered Male	0	0	
Gender variant/non-conforming	1	<1	
Prefer not to answer	8	2	
Other	2	<1	
Race (n= 391)			
American Indian or Alaskan Native	1	<1	0.2
Asian	21	5	2.5
Black or African American	22	6	5.9
White	324	83	74.9
Other	12	3	
Prefer to self-describe	2	<1	
Prefer not to say	9	2	
Ethnicity (n= 389)			
Non-Hispanic, Latino/a/x or Spanish Origin	348	90	83.3
Mexican, Mexican American, Chicano/a/x	9	2.3	6.5
Puerto Rican	4	1	
Cuban	2	<1	
Other Hispanic, Latino/a/x or Spanish Origin	5	1	
Some other race, ethnicity, or origin	8	2	
Prefer to self-describe	1	<1	
Prefer not to say	12	3	

Transfer Student (<i>n</i> = 390)			
Yes	61	16	
No	330	84	
Bridge Student ¹ (<i>n</i> = 390)			
Yes	48	12	
No	342	88	
Colleges (<i>n</i> = 403)			(<i>n</i> =27,341)
Agriculture, Forestry and Life Sciences	71	18	7.7
Architecture, Arts and Humanities	33	8	8.0
Behavioral, Social and Health Sciences	74	19	16.4
Business	59	15	21.7
Education	18	5	7.9
Engineering, Computing and Applied Science	83	21	25.6
Science	65	17	12.4

Students' Satisfaction With Online Instruction During ERT

The majority (63%) of students surveyed preferred exclusive in-person classroom instruction while 25% preferred a hybrid format, 7% preferred exclusively online classes and 5% had no preference. In a national survey of approximately 1000 university students conducted in May 2020, 57% of students indicated they were somewhat satisfied to very satisfied with their overall learning experience during COVID-19 (Means & Neisler, 2020). Similarly, in the present study students rated their overall satisfaction with COVID-19 ERT instruction at a moderate level of satisfaction using a 5-point-Likert-scale (*n*= 395, *Mdn*= 2, *M*= 2.66, *SD*= 1.20). In general, satisfaction decreased with classification (TABLE 2). Freshman had the highest percentage (59%) of being “somewhat dissatisfied” and “very dissatisfied,” while seniors had the highest percentage (39%) of being “somewhat satisfied” to “very satisfied” with online instruction (TABLE 2).

TABLE 2
OVERALL LEVEL OF SATISFACTION WITH INSTRUCTION BY UNDERGRADUATE CLASS RANK OR BY TYPE OF INSTRUCTION (ONLINE OR HYBRID)

Variable	Level of Satisfaction (Percent Responses)				
	Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Unsatisfied	Somewhat Dissatisfied	Very Dissatisfied
Level of satisfaction by class rank					
Seniors (N=67)	10.4	28.9	13.4	35.8	13.9
Juniors (N=160)	3.80	25.6	18.8	32.5	19.4
Sophomores (N=129)	8.50	18.6	17.8	35.7	19.4
Freshmen (N=32)	9.40	15.6	15.6	50.0	9.40
Level of Satisfaction by type of instruction					
Online only (N=85)	15.9	35.4	12.7	25.3	11.4
Hybrid (N=345)	5.1	19.4	18.4	38.4	18.7
Level of Satisfaction with Instructor	8.8	28.6	14.6	35.6	13.3
Amount of interaction with other students	4.0	6.8	12.1	34.3	42.9
Quality of interaction with instructors and other students	4.9	14.5	19.1	38.9	22.6

One-fifth of students requested accommodations for online-only instruction while the remaining (80%) made no such request and received hybrid instruction, a mix of in-person and online. When student satisfaction was evaluated based on requesting online only courses or those who did not make the request (hybrid courses), the majority of the students in online courses (51%) were “somewhat satisfied” to “satisfied”, while the opposite was true for students in hybrid courses (57% reported “somewhat dissatisfied” to “very dissatisfied;” TABLE 2). Furthermore, when students were asked questions about level of satisfaction with instructor, amount of interaction with other students, and quality of interaction with instructor and other students, 49%, 77% and 62% indicated they were “somewhat dissatisfied” to “very dissatisfied,” respectively (TABLE 2).

The majority of students (76%) indicated they were “somewhat” to “very unlikely” to voluntarily take an online course before the pandemic began; however, 50% of students said they were “somewhat” to “very likely” to take an online course after the pandemic started (TABLE 3). A chi-square test was performed and indicated that there was a significant association between students’ satisfaction with online instruction and their likelihood to take online courses after the pandemic (p -value < 0.0001). Students perceived satisfaction did influence their desire to take online courses post pandemic.

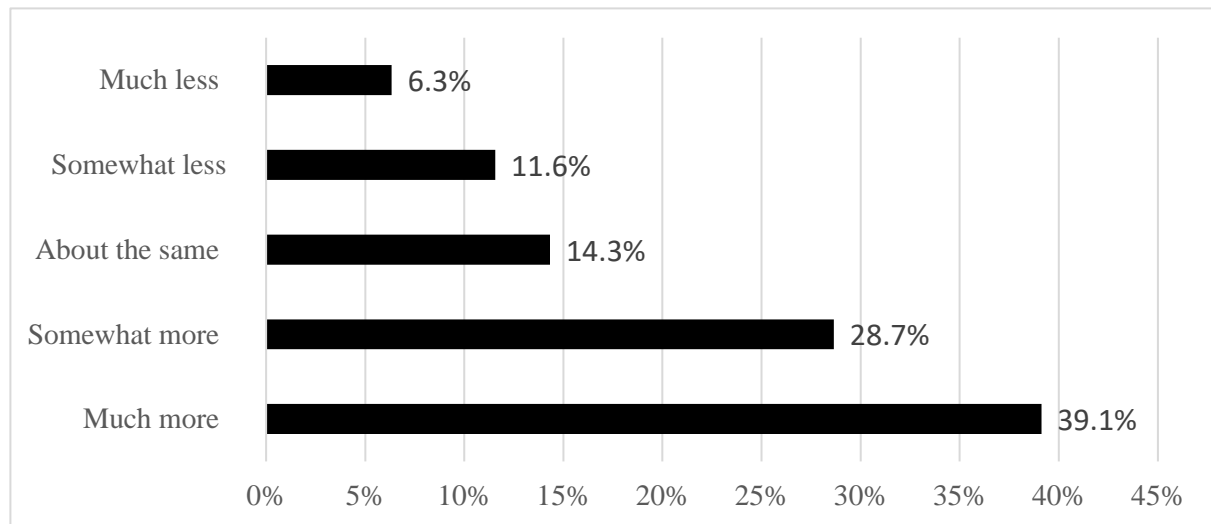
TABLE 3
PERCENT OF UNDERGRADUATE STUDENTS THAT WERE LIKELY TO TAKE AN ONLINE COURSE BEFORE AND AFTER THE COVID-19 PANDEMIC

	Level of Likelihood (Percent Respondents)				
	Very Likely	Slightly Likely	Neither Likely nor Unlikely	Slightly Unlikely	Very Unlikely
Likelihood of taking online course <i>before</i> pandemic	4.6	13.2	6.9	29.6	45.6
Likelihood of taking online course <i>after</i> pandemic	18.2	32.4	10.9	18.1	20.4

Changes and Challenges Faced by Students During ERT

When comparing the amount of time spent on assignments during the Fall 2020 to that of previous semesters, the majority of students (68%, $n= 246$) claimed they spent “somewhat” or “much more” time on assignments during the Fall 2020 (FIGURE 1). Students also responded on the amount of time (in hours) spent studying before the pandemic and during the pandemic. Before the pandemic, the mean amount of time spent studying was approximately 13 hours ($n= 423$, $SD= 10.50$). During the pandemic, students reported a mean time of approximately 16 hours ($n= 423$, $SD= 13.90$).

FIGURE 1
STUDENTS' RATE THE AMOUNT OF TIME SPENT ON ASSIGNMENTS DURING FALL 2020 IN COMPARISON TO PAST SEMESTERS



Students were given a list of common dislikes to online instruction (TABLE 4). The top three dislikes were the lack of face-to-face instruction (n= 307; 57.1% respondents), missing peer interactions (n= 322; 59.8% respondents) and having to teach the course material to themselves (n= 310; 57.6% respondents).

TABLE 4
ATTRIBUTES THAT STUDENTS DISLIKE ABOUT ONLINE INSTRUCTION AND CHANGES MADE TO ACADEMIC PLAN DUE TO COVID-19 PANDEMIC

Attribute student dislikes	Number of Respondents	Percentage of Total Responses
Miss interacting with peers	322	59.8
I had to teach myself	310	57.6
Lack of face-to-face instruction	307	57.1
Difficulty getting into a routine	267	49.6
Difficulty understanding instructor's expectations	254	47.2
Hard to set up peer study groups	208	38.7
Required too much self-discipline	175	32.5
Difficulty getting into a routine	267	49.6
Hard to reach the instructor	152	28.3
Instructor feedback was slow	143	26.6
Changes made to academic plan		
No changes were made	329	61.2
Withdrew from at least one class	100	18.6
Other changes*	69	12.8
Delayed graduation	36	6.7

*If "Other changes" was selected, students were asked to write-in examples. The most popular write-ins were grouped into themes, consisted of deferring or taking a gap semester, using of Academic Forgiveness (which allows a student to retake a course in which they previously made a "D" or "F" in and removes it from their grade point average), the need for summer classes to make up coursework, and missing study abroad opportunities.

Students were asked about the frequency of common obstacles associated with online instruction (TABLE 5). Of the obstacles listed (No privacy, inadequate electronic device, and inadequate internet service), 91% of students reported having inadequate internet service from sometimes to always, and 45% of students responded “no privacy” was an obstacle at least half of the time. The majority (57%) also responded they never had an issue with their electronic devices.

**TABLE 5
COMMON OBSTACLES FACED BY RESPONDENTS WITH ONLINE INSTRUCTION**

	Always	Most of the time	About half the time	Sometimes	Never
Inadequate Internet Service	3.6%	10.7%	12.6%	63.8%	9.3%
Inadequate computer, iPad, or other electronic device	1.2%	3.3%	4.5%	33.9%	57.0%
No privacy (hard to find a quiet place to study or attend class)	7.6%	16.7%	20.5%	33.3%	21.9%

Students were also asked to rate the importance of certain attributes of online instruction (TABLE 6). Learning environment, self-discipline, convenience, and time efficacy were the aspects given. Most students (89%) reported self-discipline to be either very or extremely important. However, the majority of students also indicated that learning environment, convenience, and time efficiency were very to extremely important, with 75%, 59%, and 81%, respectively.

**TABLE 6
ATTRIBUTES IDENTIFIED AS IMPORTANT TO ONLINE INSTRUCTION BY RESPONDENTS**

Attribute	Extremely Important	Very Important	Moderately Important	Somewhat Important	Not at all Important
Learning environment	38.7	36.2	19.2	4.6	1.3
Self-discipline	62.0	26.8	8.6	1.5	1.1
Convenience	24.5	35.0	32.1	7.1	1.3
Time Efficiency	40.5	40.8	14.9	3.3	<0.5

Students were asked to rate their technology skills before the pandemic and their current skill level (TABLE 7). Nearly 43% of students claimed their skills to be “good” (n= 431, Mdn= 4, M= 3.83, SD= 0.84) before the pandemic and this number increased to 51.5% after the pandemic with a corresponding higher percentage (5.8% increase) of students reporting “excellent” post-pandemic technology skills (n= 431, Mdn= 4, M= 4.05, SD= 75).

TABLE 7
RESPONDENTS' ASSESSMENT OF THEIR TECHNOLOGICAL SKILLS BEFORE AND
AFTER THE COVID-19 PANDEMIC

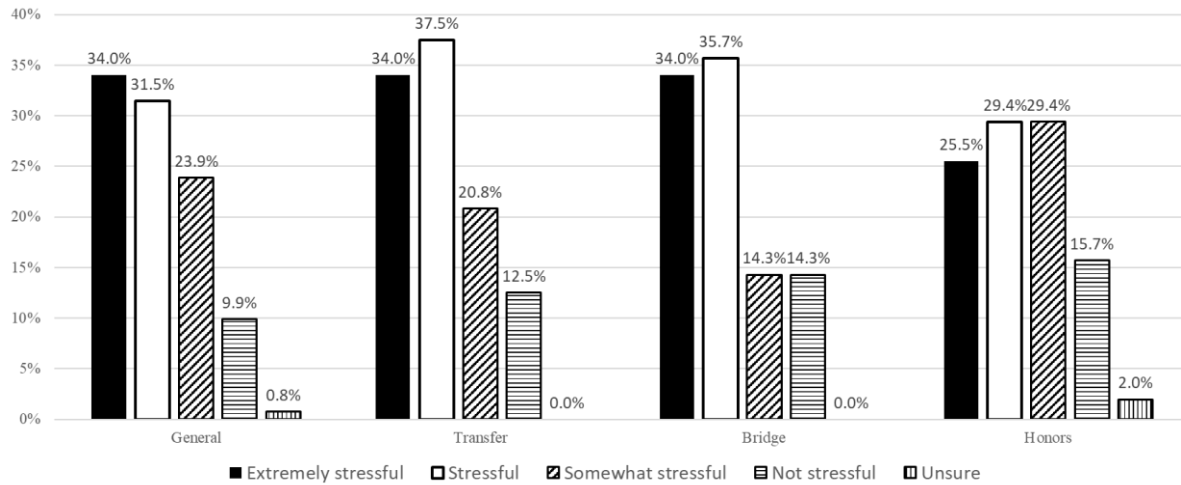
	Percentage of respondents				
	Excellent	Good	Average	Poor	Terrible
Before pandemic	22.3	42.9	30.6	3.5	0.7
After pandemic	28.1	51.5	18.3	1.6	<0.5

Stressors and Stress Level of Students During ERT

The majority of students (61%, n=329) reported no changes were made to their academic plan due to the pandemic (TABLE 4). However, 20% of students did report withdrawing from at least one class. Additionally, students at Clemson University were given the option of special grading in 2020, where students could switch to pass/fail after they received a final grade in a course. Other changes listed on the survey were delayed graduation (7%, n= 36), withdrawal from at least one class (19%, n= 100) and “other” (13%, n= 69). The “other” selection offered students the ability to elaborate on specific changes to their academic plan not given in the question. Examples of these changes included missed or shortened study abroad experiences, deferred first semester or gap semester, fully online classes, the need for summer classes to make up coursework, the use of academic forgiveness, and changes in course load. Forty-seven percent of students claimed to have lost a job or an internship opportunity due to the pandemic. Forty-five percent of students indicated economic insecurities played a role in changes to their academic plan. Thirty-seven percent of students also reported their family having a reduction in income due to the pandemic.

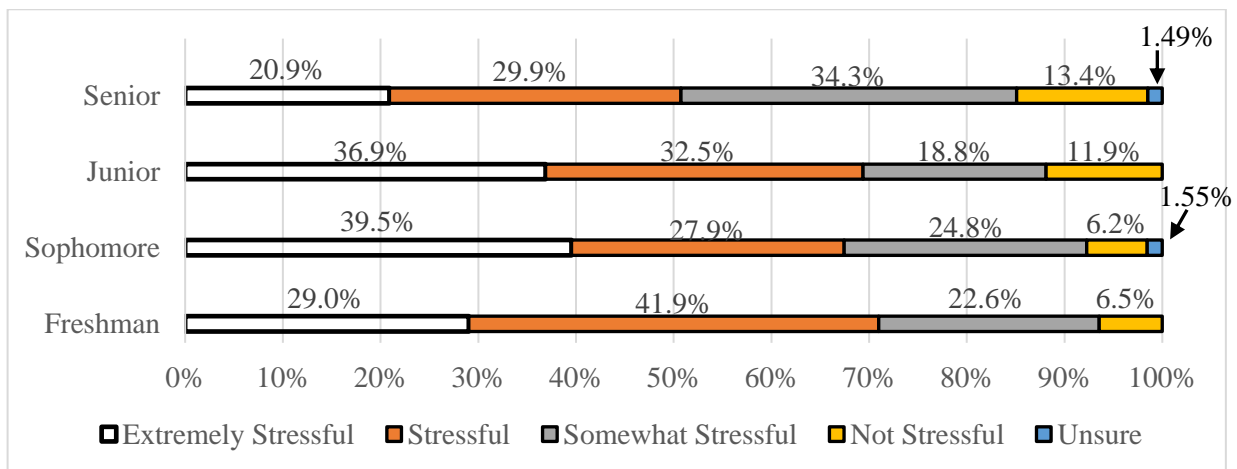
A majority of students (89%) found online instruction stressful during the Fall 2020 semester. FIGURE 2 compares student’s level of stress among different student populations (general students, transfer students, Bridge students, and Honors students). The majority of students from each group reported the semester to be stressful to extremely stressful; however, transfer and Bridge students had the highest percentage who reported stressful to extremely stressful at 72% and 70%, respectively. Students in the Honors college had the highest percentages of somewhat stressful (29%) as well as not stressful (16%). Stress level was also compared to students’ classification (FIGURE 3). The highest percentage of students who reported that the semester of online instruction was somewhat to not stressful (48%) was seniors while freshman had the highest percentage who reported that the semester of online instruction was stressful (42%). Juniors and sophomores had the highest percentages of students indicating online instruction to be extremely stressful, 37% and 40%, respectively.

FIGURE 2
STRESS LEVEL AMONG DIFFERENT STUDENT POPULATIONS DURING EMERGENCY REMOTE LEARNING AND THE COVID-19 PANDEMIC



General refers to the entire population of respondents at Clemson University; Transfer students are those entering Clemson University from another technical institution or university. Bridge students are those enrolled at Tri-County Technical College for their first year and must meet certain academic requirements before being admitted to Clemson University the following fall semester. Honors students are those students who have met certain academic criteria, such as a cumulative GPA of 3.40 or higher and at least one approved Honors course per semester, to maintain their status within the Clemson University Honors College.

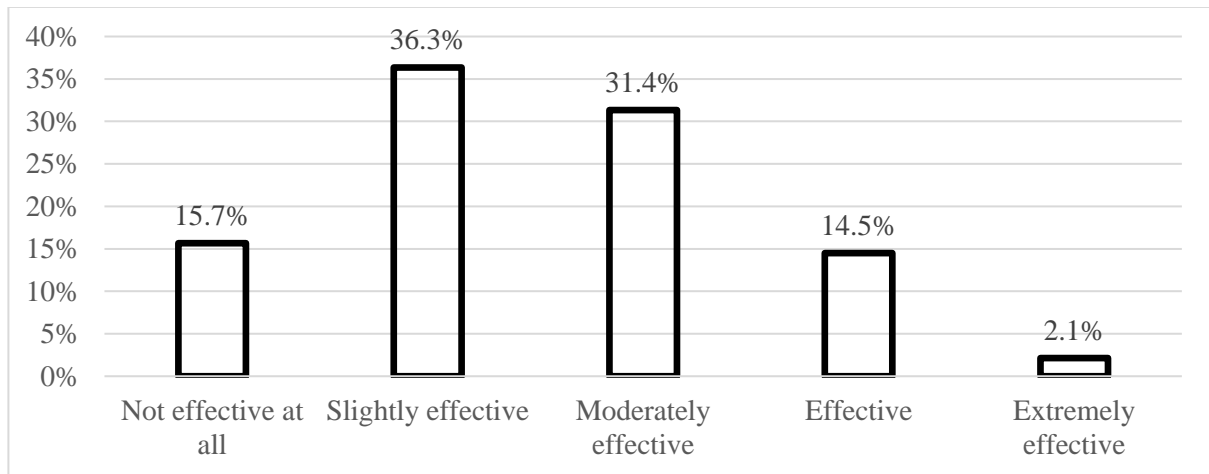
FIGURE 3
STUDENT CLASS STANDINGS AT CLEMSON UNIVERSITY AND LEVEL OF STRESS DURING EMERGENCY REMOTE LEARNING ASSOCIATED WITH THE COVID-19 PANDEMIC



Students’ Perception of Effectiveness and Organization of Online Instruction

Most students found online instruction to be slightly to moderately effective (67%) for understanding course material (FIGURE 4). Sixteen percent found online instruction not at all effective.

FIGURE 4
EFFECTIVENESS OF ONLINE LEARNING DURING EMERGENCY REMOTE TEACHING
ASSOCIATED WITH THE COVID-19 PANDEMIC



Students were also asked about the organization of their online courses using a 5-point-Likert-scale (data not shown). Most students found the online courses to be organized ($n = 431$, $Mdn = 4$, $M = 3.27$, $SD = 1.12$). Of those students that perceived online courses to be very unorganized, 69% indicated they found the courses to be ineffective. Conversely, of the students who considered online courses to be very organized, only 8% considered them to not be effective. A chi-square test of independence indicated that there was a significant association between students' perception of the organization of online courses and their overall satisfaction of online learning ($p < 0.0001$). The organization of courses appears to affect students' overall satisfaction of online instruction. Students who considered online instruction to be "unorganized" ($n = 87$) or "very unorganized" ($n = 31$), indicated being "very dissatisfied" with online instruction (84%).

DISCUSSION

When analyzing students' satisfaction with online instruction during ERT in fall semester of 2020, the findings of this study paralleled with those of the national "Survey of Student Perceptions of Remote Teaching and Learning," which was a random-sample survey of more than 1,000 college students whose coursework moved from in-person to completely online during the COVID-19 pandemic (Means & Neisler, 2020). In the national survey, satisfaction dropped from 51% being very satisfied with their courses COVID-19 pre-pandemic to only 19% being satisfied with their online experience. However, the majority of students (59%) indicated somewhat satisfaction, which mirrors the average level of satisfaction with online instruction by the Clemson University students who were surveyed in this study. Another national survey investigated the learning experiences of approximately 8,400 students from 54 US institutions during the pandemic and found that while full time students favored synchronous online courses nearly all combinations of learning experiences were deemed good by at least some students (Brooks, 2021). While less than ideal, ERT allowed students to continue to learn despite the challenges of the unknown (Hodges et al., 2020). At Clemson University, a majority of respondents preferred in-person classes, but the pandemic learning experience had a positive impact on whether respondents would consider taking online courses in the future. While satisfaction may not have been ideal, the fact that the drastic, unplanned move to online instruction did not eliminate but improved students' perception of or willingness to enroll in online courses alludes to some measure of success during ERT.

When student classification was compared with satisfaction rates, freshman seemed the most dissatisfied while seniors the least dissatisfied. This may be due to the isolation of a new experience within

the limitations set by a pandemic. Freshman entering a university in the midst of a global pandemic may not have had the time to make connections, develop relationships, and become involved in activities with their peers. The amount and quality of student-to-student interaction was indicated as a contributing factor of dissatisfaction in online instruction by both the majority of Clemson students as well as the students from the previously mentioned national survey, with 65% of students attributing the move to online instruction as a great hinderance to opportunities to collaborate with students (Means & Neisler, 2020). Additionally, when selecting from a list of nine different obstacles of online instruction, the bulk of Clemson students selected “miss interacting with my peers” as a predominate dislike. Research suggests that student engagement is developed through interactions and encouraging these interactions are especially important to the online learning experience (Anderson, 2003; Martin & Bolliger, 2018). When developing new modalities of teaching, it is important to serve your student population, institutional mission, along with student needs and desires. This includes student-to-student interaction, which is essential to online students in enhancing engagement and motivation while preventing boredom and isolation (Martin & Bolliger, 2018).

In a concurrent survey with Clemson faculty, “more methods of engagement” was the most common theme mentioned when asked about the changes they would make to ERT (Cothran et al., 2022). These open-ended comments included suggestions, such as “discover more ways to have students actively engaged in lectures,” “teach more in a synchronous format and find more interactive ways to engage the students but overall, I actually like the online environment,” and “increase the interactive activities” (Cothran et al., 2022). Studies have found that traditional technologies for promoting engagement, such as discussion boards, chat sessions, blogs, group tasks, or peer assessments, have proven effective in fostering student-to-student interactions in online courses (Revere & Kovach, 2011; Banna, Lin, Stewart, & Fialkowski, 2015). Other suggestions include videoconferencing or chatting in synchronous activities, the use of discussion boards in asynchronous activities, as well as using social media platforms to increase social interactions (Banna, et al., 2015; Everson et al., 2013; Tess, 2013).

Another facet of online instruction that contributed to students’ satisfaction was their interaction with instructors. Clemson students indicated their dissatisfaction with the amount and quality of interaction with instructors and also selected “the lack of face-to-face instruction” as well as “having to teach themselves” as leading dislikes to online instruction during ERT. “Having to teach themselves” may account for the additional study time during ERT that was reported by respondents. According to previous studies, learner-to-instructor interaction leads to higher student engagement and may affect learning outcomes. (Dixson, 2010; Gayton & McEwen, 2007). A survey of 3,800 students found that students were more satisfied and learned more when their course grade was based on discussions because felt they had more interaction with their peers and instructors (Shea et al., 2001).

Clemson students surveyed indicated slow instructor feedback as well as difficulty understanding instructor’s expectations. The use of multiple student-instructor communication channels may also enhance student engagement. Instructors providing regular announcements or email reminders have been noted as a significant engagement strategy (Martin & Bolliger, 2018). According to a more recent reports, the use of newer technologies, such as interactive live lectures, slide annotation, electronic whiteboard, classroom response system, Teams, Whiteboard, Socrative online polls, and DingTalk were all used to enrich online teaching during COVID-19 and improve students’ engagement and performance (Feng et al., 2021; Welsen et. al, 2020; Chiu, 2020; Christianson, 2020).

The vast majority of Clemson students found online instruction during the COVID-19 pandemic stressful. The year before the pandemic, Clemson University tested it’s emergency continuity system by having an e-learning day (Fall semester 2019). While we do not have any data from students or instructors on the 2019 e-learning experience, it gave students some early exposure to the system. Regardless, the stress level in the present survey coincides with a similar study conducted with over 2,000 students at Texas A&M, which revealed increased levels of stress reported by 71% of the students surveyed (Wang et al., 2020). Ninety-five percent of these same students also reported these increased levels were directly related to the pandemic (Wang et al., 2020). The study found that the leading contributor to increased stress was related to academics, specifically the transition and management of online classes (Wang et al., 2020).

Much like the Clemson students surveyed, the majority of Texas A&M students surveyed reported stressors related to adapting to distance learning and an increased workload (Wang et al., 2020).

Many college students experienced more significant changes to their living situation, work, and education during the COVID-19 pandemic than did other groups in society (Charles et al., 2021). For instance, college students who were not living with their parents prior to the pandemic may have been forced to return to a living environment that was not as comfortable as their college environment or conducive to online instruction (Charles et al., 2021). Furthermore, college students may be concerned about the impact of the pandemic on their academic progress and ability to enter the workforce (Charles et al., 2021). Clemson students surveyed reported several changes to their academic plans, such as delayed graduation and gap semesters, as well as threatening economic insecurities due to the pandemic.

When compared to the general population, Bridge and transfer students reported some of the highest rates of stress during ERT. Bridge and transfer students make up 30% of the Clemson's overall student population (Clemson, 2022). Technically speaking, Bridge students are a type of transfer student. While transfer students can come from any type of institution of higher education, many (25% of total undergraduate population) transfer from community and technical colleges (Clemson, 2022). These students are already facing the challenges of transitioning to a four-year institution or even to a new four-year institution.

Transfer students are required to deal with the administration of different institutions and repeat the process of learning how to be a student in a new academic environment (Chin-Newman & Shaw, 2013). Students may also experience what has been referred to "transfer shock" or *transitional trauma*—"the level of alienation a student experiences when unfamiliar with some of the norms, values and expectations that predominate in a school community" (Bennett & Okinaka, 1990; Fink, 2021). Transfer students report less interaction with four-year faculty and are less likely to participate in co-curricular activities such as study abroad or undergraduate research (Fink, 2021). These students were already coping with the transition to a new institution, and then bare the added stress that occurred with the unexpected switch to online instruction during their first semester. In general, administrators and staff can encourage a sense of belonging for transfer students by creating orientation programs, specifically for these students, that cover expectations and promote clubs or groups for support and networking (Shaw et al., 2019).

Transfer and Bridge students as well as incoming freshmen who began college during the fall semester of 2020 missed the normal two-day, in-person summer orientation offered prior to entrance into Clemson University. Instead, orientation was administered virtually during the summer of 2020. While the levels of increased levels of stress and decreased levels of satisfaction among these groups may be attributed to a variety of reasons, the simple fact that these students did not receive the normal orientation process and ability to connect with each other is a key factor. In addition, these student groups may have needed more attention and resources from administrators, faculty, and staff during ERT.

CONCLUSION

Due to the abrupt shift to ERT during the fall semester of 2020, students and instructors alike faced many challenges. While stress was high and satisfaction low for most college students surveyed, they still reported a higher likelihood to take an online course at present versus pre-pandemic. Considering the uncertainty, fear, and isolation that occurred worldwide amidst a global pandemic, ERT alone cannot claim sole responsibility for students' level of stress and lack of satisfaction during the fall semester of 2020. However, as institutions of higher education, focus should be narrowed on the ways to impact and aid students' educational pursuits in the middle of crises, and much can be learned from the experiences of ERT during the fall semester of 2020.

Organization, self-motivation, and increased interaction among other students as well as with instructors are key to effectiveness and satisfaction of online instruction. Instructors should present clear objectives, provide timely feedback, and utilize established as well as new technologies to increase and enhance student engagement and interaction with others. This may mean more training for instructors since some may be more attuned than others in technological advancements. Since students have noted an

increased interest in some form of online modality, continued training for faculty to increase their aptitude and quality of online instruction should be considered. Students also need to make more of an effort to stay engaged and practice self-discipline to complete assignments and tasks on time. Special attention and accommodations to freshmen and transfer students is also needed during shifts of this magnitude since they may already be undergoing drastic transitional phases. The truth is everyone, from administrators to students, must do their part to improve any experience and stay connected, especially during a global pandemic.

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ENDNOTES

1. Bridge students are enrolled at Tri-County Technical College for their first year and must meet certain academic requirements before being admitted to Clemson University the following fall semester.
2. Honors students must meet certain academic criteria, such as a cumulative GPA of 3.40 or higher and at least one approved honors course per semester, to maintain their status within the Clemson University Honors College.

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APPENDIX

LIKERT-SCALE SURVEY QUESTIONS

#	Questions
Q3	How likely were you to take an online course BEFORE the pandemic?
Q5	How likely will you be to take an online course AFTER the pandemic is over?
Q14	Overall, how organized were your courses during online instruction?
Q15	Overall, what were some common obstacles you faced with online instruction? 1. Inadequate internet service 2. Inadequate computer, iPad, or other electronic device 3. No privacy (hard to find a quiet place to study or attend class)
Q16	How effective has online instruction been for you in terms of understanding course material during the fall 2020 semester?
Q17	How stressful was online instruction for you during the fall 2020 semester?
Q18	Rate your overall satisfaction with online instruction.
Q19	How important are the following with respect to online instruction? 1. Time efficiency 2. Convenience 3. Self-discipline 4. Learning environment
Q21	With the change in course delivery during fall 2020, rate the amount of time you spent outside of class completing assignments and preparing for exams this semester in comparison to previous semesters. If fall 2020 was your first semester at Clemson University, select “Not Applicable.”
Q43	Please rate your level of satisfaction with online instruction during the fall 2020 semester: 1. Interactions with instructors 2. Amount of interaction with other students 3. Quality of interaction with instructions and students
Q45	How would you rate your technology skills BEFORE the fall 2020 semester?
Q47	How would you rate your technology skills NOW?

FREE RESPONSE SURVEY QUESTIONS

#	Questions
Q1	What change(s), if an, did you make in your academic plan due to the COVID-19 pandemic? Other (Please explain in the space provided)
Q6	On average, how many hours per week do you spend studying BEFORE the pandemic?
Q9	On average, how many hours per week did you spend studying BEFORE the pandemic?
Q49	Were there any other obstacles you faced with online instruction not listed in the previous question?
Q50	Please provide an example of what you found was effective in online instruction?
Q51	List any other factors of online instruction not mentioned in the previous question that you disliked.

YES/NO SURVEY QUESTIONS

#	Questions
Q2	If you made changes to your academic plan, were these changes influenced by current or potential economic insecurities related to the pandemic?
Q12	When given the option, did you request online-only instruction for all classes during the fall 2020 semester?
Q27	Did your family have a reduction in income due to the pandemic?
Q28	Did you lose a job opportunity or internship opportunity because of the pandemic?

MULTIPLE CHOICE SURVEY QUESTIONS

#	Questions
Q1	<p>What change(s), if an, did you make in your academic plan due to the COVID-19 pandemic? Please select all that apply:</p> <ul style="list-style-type: none"> • Delayed graduation • Withdrew from at least one class • No changes were made • Other (Please explain in space provided)
Q10	<p>Which type of classroom instruction do you prefer?</p> <ul style="list-style-type: none"> • Exclusively online digital distance learning • Exclusively traditional in-person classroom instruction • Hybrid (combination of online and traditional in-person instruction) • No preference
Q20	<p>What did you dislike about online instruction? Please select all that apply.</p> <ul style="list-style-type: none"> • Lack of face-to-face instruction • Hard to reach the instructor • Instructor feedback was slow • Difficulty in understanding the instructor's expectations • Miss interaction with my peers • Hard to set up peer study groups • Required too much self-discipline • Difficult to get into a routine • I had to teach the course material to myself