Online Learning During the Covid Crisis: Student Views

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In the spring of 2020, students at all levels of education were suddenly thrown into online learning situations. Higher education institutions reacted without regard or exposure to known best practices for online learning. As a result, student satisfaction levels dropped dramatically. Before Covid, those participating in online courses chose that option. Occasionally, an individual course would only be offered online, but for the majority, students who did not like online courses could avoid them. With the Covid crisis, all students were thrust into an online educational environment with no alternatives and little notice. To examine the learning during this crisis, we developed a 22-item scale on student perspectives of online learning and administered the survey to a large regional university in the southwest US during the Covid crisis (n=1160). We found online students prefer non-quantitative courses, are motivated by many scheduling issues, believe they learn less online and feel online students must be self-motivated and more disciplined, among other findings.

Keywords: student evaluations of teaching, online learning, COVID-19, survey

INTRODUCTION

In the spring of 2020, students at all levels of education were suddenly thrown into online learning situations. Much of this was done without regard or exposure to known best practices for online learning. As a result, student satisfaction levels dropped dramatically. Before Covid, those participating in online courses chose that option. Occasionally, an individual course would only be offered online, but for the

majority, students who did not like online courses could avoid them. With the Covid crisis, all students and professors were thrust into an online educational environment with no alternatives and little notice.

Many surveys have reported varying degrees of preference for one method of teaching or another. A choice of "liking face to face" simplifies a multi-faceted and nuanced problem. Why do students prefer one method of instruction versus another? This project was designed to explore the reasons why an individual student might prefer one avenue of education or another in detail. Hopefully, armed with this knowledge, we can adapt the negatives into positives.

We will begin by first examining the literature on online learning. Next, we will describe the data collection and research methodology. Then we will examine the study's results and discuss the findings. Lastly, we will denote the implications and denote limitations.

LITERATURE REVIEW

The effects of the COVID-19 pandemic have been profound and widespread throughout the academic community. Even though online and distance education is not a novel idea, the involuntary conversion to this mode of education left many students, faculty, and administrators in a state of anxiety. This selected literature review will discuss the perceptions of online learning before the COVID-19 pandemic. It will then discuss online learning in the context of the pandemic and the insights that have been gained from the sudden adaptation to online learning.

Since the introduction of online learning, numerous studies of its perceived efficacy have been conducted. For example, Waldman et al., (2009) compared business students who were experienced online learners with those who were taking their first online course. Both groups of students agreed that the online courses were more time-consuming and that communication with the instructor and coordination of interactions between students presented problems. The authors suggested that additional support for inexperienced students should be provided. Otter et al., (2013) compared student and faculty perceptions of online and traditional courses and found that, compared to faculty perceptions, students perceive online courses as more self-directed, that they must teach themselves, and feel more disconnected from the education process. Additionally, faculty members consider the professor's role in online education as more crucial than students. Fedynich et al., (2015) surveyed graduate students' perceptions of online learning and found that the instructor played an integral role in student satisfaction along with interaction with other students. The most significant challenges were identified as a lack of sufficient learner support and instructional techniques that motivated the desire to learn.

The above-mentioned issues have been cited in numerous studies of face-to-face versus online learning. Therefore, it seems logical that with the onset of COVID-19 and the ensuing interruption of face-to-face classes, the environment of online education would be of paramount importance. Students who never experienced distance learning were forced into such an environment. Likewise, some faculty who had no experience with online teaching were suddenly forced to deliver their classes remotely. This has created the potential for a disconnect between faculty and students, increased anxiety, and a decline in classroom performance and overall learning. Additionally, the nature of the pandemic has created an environment with the potential for anxiety and depression, which can be detrimental to academic performance. Such results were revealed in a study by Kecojevic et al., (2020) who found that students who were more concerned with COVID-19 tended to be more anxious and depressed and less productive academically.

Alsaady et al., (2020) measured students' exam anxiety and found male and female students both exhibited high anxiety levels, but female students' anxiety was higher. The authors speculate that this anxiety may be influenced not only by Covid-19 related issues, such as financial stressors and academic suspensions but also by community anxiety related to fear of contracting the virus and reaction to misinformation from incorrect news reports. Finally, the lack of interpersonal communication may exacerbate such anxiety.

Miller & Racca, (2020) studied factors that lead to an effective transition to an online format in a sophomore-level accounting class. They identify four critical success factors in the transition to online learning:

1. Instructor experience with online education;
2. College requirements for student technology;
3. Existing exam proctoring solutions and computerized exam delivery; and
4. Use and integrate online publisher resources.

Further, the authors found that students had the most difficulty with material that was initially delivered in an in-person format but was tested online post-transition. This implies that instructors should consider the stress of the sudden transition as a mitigating factor when evaluating the efficacy of online learning during the immediate transition period.

Trout (2020) studied students who had no prior experience with online learning before the pandemic-related switch to distance learning. He found that students who perceived online courses as flexible were more likely to take future online courses. However, students disagreed that the online format provided effective learning and reported that they would be more interested in taking online classes outside their major. Finally, results indicated that students lost motivation due to the lack of human interaction after classes were converted to online. The major implication of this study is that online instructors must strive to simulate an effective in-person interaction that will reach first-time online students.

Gonzalez et al., (2020) conducted a field study of 458 students in which they studied student performance in three different courses both before and after the beginning of the COVID-19 shutdown. The results showed that the group of students who were interrupted by the shutdown performed significantly better on assessment activities than did the group whose studies were not interrupted. Further, when they analyzed student learning strategies in both groups, the results showed that the group whose studies were not interrupted did not study continuously. The authors imply that the COVID-19 shutdown led to an improvement in learning performance. This study does not address student perceptions of the effectiveness of the teaching methods both before and after the shutdown.

Aristovnik et al., (2020) conducted a global study of students and found that students were satisfied with the support they received from their universities. However, they were concerned about their academic studies and professional futures; additionally, they experienced boredom, anxiety, and frustration.

Espino-Díaz et al., (2020) suggest that the events resulting from the COVID-19 shutdown represent a paradigm shift in online education. This global study found that 93% of the teachers surveyed suffered from high anxiety due to a combination of being confined and the stress of distance education. The authors suggest that teachers be trained using guidelines that combine Information and Communication Technologies (ICT) and neuroeducation, the study of how the brain works.

DATA COLLECTION AND RESEARCH METHODOLOGY

Data was collected for this research using an online survey via Qualtrics available to all undergraduate and graduate students at the authors' university. The survey was available from November 23, 2020, until March 27, 2021. During this time there were 1,160 recorded responses. We filtered students for enrollment during either the fall 2020 or the spring 2021 semesters. Responses that did not answer the enrollment question affirmatively or were not completed were filtered out from the responses. A sample of 1,000 responses remained.

Each group of Likert statements on the survey contained one statement that served as an attention check. While early research advocated for the use of attention checks (Oppenheimer et al., 2009), others advised that eliminating respondents based on these checks could introduce bias into the results. (Anduiza & Galais, 2017; Berinsky et al., 2014, 2016)

Demographics

Survey responses were spread amongst the student population with juniors and seniors being over-represented, with 10.8% being first-year, 9.8% as sophomores, 30.7% as juniors, 38.9% as seniors, and 9.8% as graduate students. All colleges at the university were represented with the largest group being from business at 38.9%, education at 15.3%, math and sciences at 14.1%, liberal arts at 11.4%, nursing at 7.8%, and the smallest percentage was fine arts with 3.4% (9.1% chose "other.")

Most of our student population worked while attending college, with 30.4% working full-time, 42.6% working part-time, and 12.3% actively searching for work. Only 14.7% of the respondents were not currently working by choice. The respondents were fairly evenly spread into thirds for family income with 26% reporting annual income of less than $25,000, 33.4% with income between $25,000 and $75,000, and 20.7% over $75,000. Approximately 20% of the students did not know or did not wish to report their annual family income.

The majority of the respondents were traditional-aged students, with 68% between 20 and 30. Most (83%) were not married, and 82.1% did not have children. Only 4.7% of our sample had military experience. Nearly half of our sample (48%) identified as a first-generation college student, defined as a student whose parents did not graduate from a 4-year college.

Our sample is self-reported as racially diverse. While the majority of 57% responded that they were Caucasian, there were 12% Asian or Pacific Islanders responding, 11% as Hispanic or Latinx, 8% African American and 6% reported as Native American (the remainder preferred not to answer).

Most students (88%) indicated they knew someone who had tested positive for Covid-19, and 38% reported they knew someone who had died from Covid-19.

At the authors' university, several online classes are regularly scheduled each semester. During the fall 2020 semester, these continued to be offered. In addition, all traditional, face-to-face classes were offered with an online component. Students were able to choose whether they would attend in the classroom with required masks and social distancing or if they would rather attend class online synchronously. The virtual platform was determined by the instructor with Zoom, Webex, and Microsoft Teams being used. In the present study, we did not distinguish between existing asynchronous online classes and the emergency extended sections.

Students were asked, "How many online courses have you completed before Fall 2020?" Almost half (47.7%) responded with four or more previous online classes. Those that had not taken any online classes were 15.6%. We asked, "How many online or extended section courses are you taking in fall 2020?" Over half (57.4%) were taking three or more online classes.

RESULTS

We are trying to expand the depth of our understanding in the preferences of student learners, trying to expand the analysis from simply liking or disliking online classes. In addition to the demographic questions, we asked twenty-two questions about the preference of online students. The text of all questions is in the appendix. Full statistics are available from the authors. For each statement, we used a seven-point Likert scale, with 1=strongly agree; 2=agree; 3=somewhat agree; 4=neither agree nor disagree; 5=somewhat disagree; 6=disagree; and 7=strongly disagree. We started with some basic questions about online classes and moved to more specific issues. We broke the questions down into five sub-categories: Course Learning; Course Subject; Personality of Learner; Scheduling; and Physical issues.

Course Learning

Many students perpetuate a cultural myth that online courses are easy, or easier than face-to-face classes. As faculty, we know that is not true. While an online course may reduce the time for the student by eliminating driving and parking on campus, and the necessity of getting dressed, the content of the course should be similar or near identical regardless of the format.

To get student feedback, we offered the statement: "Online classes are easier than face-to-face classes." Easier was not defined in questions 29-1. In our sample, the mean was 4.4028. The results show those who believe online classes are easier are fairly balanced, 34% agree and 49% disagree.

TABLE 1
ONLINE CLASSES ARE EASIER

Q29_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	83	8.32	83	8.32
2=Agree	81	8.12	164	16.43
3=Somewhat Agree	176	17.64	340	34.07
4=Neutral	163	16.33	503	50.40
5=Somewhat Disagree	160	16.03	663	66.43
6=Disagree	176	17.64	839	84.07
7-Strongly Disagree	159	15.93	998	100.00

Next, we asked about the amount of learning. We posed the statement: "Students learn less in an online class than in a face-to-face class." In our sample, the mean was 3.282.

TABLE 2
STUDENTS LEARN LESS ONLINE

Q29_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	193	19.38	193	19.38
2=Agree	192	19.28	385	38.65
3=Somewhat Agree	220	22.09	605	60.74
4=Neutral	141	14.16	746	74.90
5=Somewhat Disagree	98	9.84	844	84.74
6=Disagree	86	8.63	930	93.37
7-Strongly Disagree	66	6.63	996	100.00

The results indicate by a margin of 2.5-to-1 (60% to 16%), students believe they learn less in an online class. Is that perception correct or are the online classes easier, making the students feel they learned less?

One criticism of online courses from professors is the low-quality discussions. While those discussions occur naturally in a face-to-face class, for online courses the discussions are forced, not spontaneous, and often result in limited benefits. Do the students feel the same? We posed the statement, "Students are less willing to speak their minds in an online discussion than in a face-to-face class." In our sample, the mean was 3.4944. The results are shown below.

TABLE 3
STUDENTS PARTICIPATE LESS IN ONLINE DISCUSSIONS

Q29_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	176	17.69	176	17.69
2=Agree	202	20.30	378	37.99
3=Somewhat Agree	161	16.18	539	54.17
4=Neutral	138	13.87	677	68.04
5=Somewhat Disagree	125	12.56	802	80.60
6=Disagree	114	11.46	916	92.06
7-Strongly Disagree	79	7.94	995	100.00

There is some support that students feel the same as the authors, that online discussions are inferior quality because students participate less or are less candid online.

We reversed the statement as, "Online classes provide better opportunities for students to interact with each other than does face-to-face classes." In our sample, the mean was 4.9527.

TABLE 4
ONLINE CLASSES ALLOW FOR BETTER STUDENT INTERACTION

Q29_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	41	4.12	41	4.12
2=Agree	57	5.73	98	9.86
3=Somewhat Agree	105	10.56	203	20.42
4=Neutral	179	18.01	382	38.43
5=Somewhat Disagree	168	16.90	550	55.33
6=Disagree	211	21.23	761	76.56
7-Strongly Disagree	233	23.44	994	100.00

The above table demonstrates that online courses have worse interaction from the student's perspective by a ratio of 3 to 1 (61% to 20%).

We wondered if students felt they benefitted from online classes by retaining more information than they would in a face-to-face class. We stated, "Students retain more information from an online class." In our sample, the mean was 2.5196 (agree).

TABLE 5
STUDENTS RETAIN MORE FROM ONLINE CLASSES.

Q29_8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	320	32.23	320	32.23
2=Agree	272	27.39	592	59.62
3=Somewhat Agree	188	18.93	780	78.55
4=Neutral	95	9.57	875	88.12
5=Somewhat Disagree	48	4.83	923	92.95
6=Disagree	36	3.63	959	96.58
7-Strongly Disagree	34	3.42	993	100.00

Our student sample indicated strongly, by a 6 to 1 ratio (78% to 9%) that they retain more from an online class. Again, students perceived they retained more. Whether they retained more, in reality, would have to be studied further.

Conventional wisdom assumed online courses had more technology available for use by students. In truth, the technology is available for all classes, and many instructors use these as supplements to a face-to-face course. However, faculty who disdain innovative technologies often rely on in-person classes. We offered the statement, "There are more resources available to the student in an online class." In our sample, the mean was 4.74144.

TABLE 6
MORE RESOURCES FOR AN ONLINE CLASS

Q29_9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	30	3.02	30	3.02
2=Agree	39	3.92	69	6.94
3=Somewhat Agree	76	7.65	145	14.59
4=Neutral	330	33.20	475	47.79
5=Somewhat Disagree	198	19.92	673	67.71
6=Disagree	180	18.11	853	85.81
7-Strongly Disagree	141	14.19	994	100.00

In our sample, students disagreed that online classes have more resources by a ratio of 3 to 1. Perhaps students have discovered that online resources are available to all students, in all formats, including face-to-face, but online courses are more dependent upon technology.

Course Subject

We wondered whether the type, of course, affected students' satisfaction with the online environment. Rather than ask about every individual discipline (then requiring dozens of extra questions), we divided courses into quantitative and non-quantitative. For this section, the survey explained: "Quantitative classes, such as Math, Statistics, Analytics, Accounting, and Programming, depend heavily on numbers and logic. Non-quantitative classes, such as English, Sociology, History, Law, and Management do not depend heavily on numbers or logic and may involve more writing, research, and discussions." With this defined in the survey, we stated, "Quantitative classes are easier in an online course." In our sample, the mean was 4.5576.

TABLE 7
QUANTITATIVE CLASSES ARE EASIER ONLINE

Q30_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	58	5.82	58	5.82
2=Agree	76	7.62	134	13.44
3=Somewhat Agree	75	7.52	209	20.96
4=Neutral	343	34.40	552	55.37
5=Somewhat Disagree	111	11.13	663	66.50
6=Disagree	156	15.65	819	82.15
7-Strongly Disagree	178	17.85	997	100.00

Students disagreed. They believed quantitative classes (math, statistics, accounting) are more difficult when taken online by a 2 to 1 ratio (44% to 21%).

To confirm this, we also asked the question in reverse, stating, "Non-quantitative classes are easier in an online course." On this statement, the mean was 3.5979.

TABLE 8
NON-QUANTITATIVE CLASSES ARE EASIER ONLINE

Q30_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	116	11.66	116	11.66
2=Agree	154	15.48	270	27.14
3=Somewhat Agree	156	15.68	426	42.81
4=Neutral	349	35.08	775	77.89
5=Somewhat Disagree	82	8.24	857	86.13
6=Disagree	84	8.44	941	94.57
7-Strongly Disagree	54	5.43	995	100.00

In our sample, students felt non-quantitative courses (history, sociology, management) are easier online by a ratio of 2 to 1 (42% to 23%). These findings are especially important when deans and department chairs are deciding which course to offer online, as students feel they are better equipped to take non-quantitative courses online.

Many courses use group projects. We wondered whether doing a group project online would be easier or more difficult in a face-to-face course. We assumed that students would prefer face-to-face interactions since the students would have more experience in the traditional format. We offered the statement; Online classes make group projects easier than a face-to-face class. In our sample, the mean was 3.03423.

TABLE 9
ONLINE GROUP PROJECTS ARE EASIER

Q31_9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	266	26.79	266	26.79
2=Agree	191	19.23	457	46.02
3=Somewhat Agree	168	16.92	625	62.94
4=Neutral	178	17.93	803	80.87
5=Somewhat Disagree	42	4.23	845	85.10
6=Disagree	97	9.77	942	94.86
7-Strongly Disagree	51	5.14	993	100.00

To our surprise, our study found students preferred online group projects by 625 to 190, or a 3 to 1 ratio. We figured the convenience of meeting online might be a big benefit for the students.

Personality of the Learner

We asked several questions to see if the personality of the learner affected their views of online courses and online learning. We started with a most basic statement; I enjoy online classes. In our sample, the mean was 3.429577.

TABLE 10
I ENJOY ONLINE CLASSES

Q31_7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	198	19.92	198	19.92
2=Agree	180	18.11	378	38.03
3=Somewhat Agree	229	23.04	607	61.07
4=Neutral	103	10.36	710	71.43
5=Somewhat Disagree	66	6.64	776	78.07
6=Disagree	104	10.46	880	88.53
7-Strongly Disagree	114	11.47	994	100.00

We were encouraged to find that most students (61%) enjoy online courses. This could explain the rapid increase in online enrollment leading up to the Covid crisis. However, with the crisis, all students were thrust into online classes whether they desired online learning or not. The more important result is that nearly 30% of students dislike online classes but were involuntarily put into them because of the Covid crisis. While the majority enjoys online activities, a sizable portion of the student body would avoid online courses if given an option. As a result, in-person courses will not be extinct anytime soon.

Not all students are alike. Can we make generalizations about which students are more likely to succeed in an online learning environment? If so, then we can search for students with those characteristics when recruiting/advising students on which courses to take and in what format. First, we posed the statement, an online student needs to be self-motivated. We assumed this to be true since online students must at a minimum manage their own schedule without the weekly class meetings to keep on track. In our sample, the mean was 1.681043, indicating strong agreement.

TABLE 11
ONLINE STUDENTS MUST BE SELF-MOTIVATED

Q33_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	543	54.46	543	54.46
2=Agree	307	30.79	850	85.26
3=Somewhat Agree	89	8.93	939	94.18
4=Neutral	45	4.51	984	98.70
5=Somewhat Disagree	7	0.70	991	99.40
6=Disagree	5	0.50	996	99.90
7-Strongly Disagree	1	0.10	997	100.00

Looking at this question in detail, we found that students perceive that an online student must be self-motivated. To our surprise, it was nearly unanimous, with 94% in agreement and only 1% disagreeing.

We also wondered about another student characteristic, self-discipline. We assumed an online student must have more self-discipline to succeed, by having to set aside their schedule and adjust for exam studying and project preparations. We stated an online student needs to be more disciplined than a face-to-face student. In our sample, the mean was 2.17352, showing agreement.

TABLE 12
ONLINE STUDENTS MUST BE MORE DISCIPLINED

Q33_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	421	42.23	421	42.23
2=Agree	281	28.18	702	70.41
3=Somewhat Agree	124	12.44	826	82.85
4=Neutral	98	9.83	924	92.68
5=Somewhat Disagree	32	3.21	956	95.89
6=Disagree	27	2.71	983	98.60
7-Strongly Disagree	14	1.40	997	100.00

We found that students believe online students must be more disciplined by a ratio of 10 to 1 agree (82% to 8%). These findings confirmed our expectations. In our survey, discipline was not defined, and neither was self-motivated, so it is likely the concepts overlapped in the students' minds.

Scheduling Issues

We believed that students prefer online courses because of the flexibility they offer. We started with a blanket statement, that online classes provide more flexibility to complete class requirements than do face-to-face classes. In our survey, the mean was 2.9295, somewhat agrees.

TABLE 13
ONLINE CLASSES PROVIDE MORE FLEXIBILITY

Q29_7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	222	22.36	222	22.36
2=Agree	239	24.07	461	46.42
3=Somewhat Agree	191	19.23	652	65.66
4=Neutral	184	18.53	836	84.19
5=Somewhat Disagree	68	6.85	904	91.04
6=Disagree	63	6.34	967	97.38
7-Strongly Disagree	26	2.62	993	100.00

To no surprise, we found that students prefer online courses because they are more flexible with their schedule, by a ratio of almost seven to one (65% to 9%). We decided to get into more detail on what issues of the students required this flexibility. If we could identify the issues of students that lead to online enrollments, perhaps administrators could factor this into their plans.

We first asked about family issues. We posed the statement, schedule conflicts with family are an important feature for me in choosing an online class. In our sample, the mean was 3.133, agree.

TABLE 14
FAMILY CONFLICTS LEAD ME TO ONLINE CLASSES

Q31_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	208	20.90	208	20.90
2=Agree	219	22.01	427	42.91
3=Somewhat Agree	180	18.09	607	61.01
4=Neutral	198	19.90	805	80.90
5=Somewhat Disagree	46	4.62	851	85.53
6=Disagree	98	9.85	949	95.38
7-Strongly Disagree	46	4.62	995	100.00

We found that family concerns were a huge motivator in seeking flexibility from an online class. Students agreed with this statement by a ratio of three to one (61% to 20%). We expect this to be even higher in campuses that specialize in serving non-traditional students.

We also asked about work schedules. On our campus (like most) a majority of students work full or part-time while going to school. We stated schedule conflicts with work are an important feature for me in choosing an online class. In our sample, the mean was 2.5905.

TABLE 15
WORK CONFLICTS LEAD ME TO ONLINE CLASSES

Q31_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	335	33.70	335	33.70
2=Agree	238	23.94	573	57.65
3=Somewhat Agree	142	14.29	715	71.93
4=Neutral	171	17.20	886	89.13
5=Somewhat Disagree	25	2.52	911	91.65
6=Disagree	52	5.23	963	96.88
7-Strongly Disagree	31	3.12	994	100.00

The time commitments needed for work are a major factor in influencing our students to prefer online courses by a seven-to-one ratio (71% to 9%). The influence of work would likely increase as students progress, and have more opportunities for internships as well as employment. In our sample, the needs of employment required flexibility by a ratio of six to one.

We believed that students often take online classes because their other course schedules are so hectic. Especially as students progress to junior and senior status, the course offerings are more limited, making a student's schedule more problematic. We offered the statement, schedule conflicts with other classes are an important feature for me in choosing an online class. In our sample, the mean was 2.389.

With family issues and work, times available for classes could be limited, requiring the student to enroll in online courses to maintain the required number of hours per semester. In our project, 78% of students indicated they took online courses because of scheduling with other classes.

TABLE 16
OTHER COURSE CONFLICTS LEAD ME TO ONLINE CLASSES

Q31_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1=Strongly Agree	333	33.53	333	33.53
2=Agree	298	30.01	631	63.54
3=Somewhat Agree	146	14.70	777	78.25
4=Neutral	142	14.30	919	92.55
5=Somewhat Disagree	23	2.32	942	94.86
6=Disagree	34	3.42	976	98.29
7-Strongly Disagree	17	1.71	993	100.00

Lastly, we asked about medical issues affecting a student's schedule. We posed the statement; medical issues are an important feature for me in choosing an online class. In our survey, the mean was 4.0754 (neutral), and the numbers who agreed versus disagreed were almost perfectly divided.

Of course, all these scheduling matters could overlap. The family obligations could be medical issues of a sick parent or sibling. The employment could be taking care of an elderly family member.

Physical Issues

Finally, we wanted to examine a few pragmatic problems that are unrelated to educational style, course content, or format. First, we inquired about internet access. Nearly a quarter (23%) of students indicated they have problems with internet access which limited their ability to enroll/take/complete online classes.

We also wondered about the difficulty of commuting. We offered the statement, commuting to campus in terms of time and/or expense is an important feature for me in choosing an online class. Over half (58%) of our sample indicated the time and expense of commuting to campus was a key factor in encouraging online enrollment.

Validity and Reliability

The survey had face validity. For internal consistency, we conducted a Cronbach's alpha test for the twenty-two items in our scale. The score for the 22-item scale was .718.

DISCUSSION AND IMPLICATIONS FOR PRACTICE

For course learning, these results show many students prefer online courses, but that preference is not unanimous. Schools should not solely rely on online education. Students feel they retain more information online, but future projects should examine whether the improved retention is a perception or reality. Finally, reinforcing conventional wisdom, students feel that online discussions are lacking.

Course subjects make a difference. In our study we found students feel greater success in non-quantitative courses. Of course, this finding needs further scrutiny as all quantitative courses or all courses within a discipline might be more productive in an online format. Group projects online will work in an online format, at least from the students' perspectives.

As far as the personality of the learner, an online student in higher education needs to be self-motivated. Enrollment management in higher education needs to screen students who wish to enroll in online classes to see if their motivation is sufficient. In addition, while online classes are popular and growing, they do not have unanimous support. A sizable portion of students does not like online courses. Future projects should examine the exact demographics of these students.

Scheduling is also a concern. Our students have many demands for their time, especially family obligations and work. As a result, online courses have multiplied, but another format might not be the solution for students who are overwhelmed with other demands for their time.

Finally, the growth of online courses has some physical issues that higher education must address. A substantial number of students lack reliable internet access. In addition, for many students, the obligation of transportation to/from campus limits their opportunities.

Limitations

Our project, like all survey projects, has limitations. First, the student sample while large (1,160) was not random, which limits generalizations. These findings might not represent all students on our campus. Further, one sample was only examined campus, which may or may not be representative of the typical American college campus. Finally, these results are a snapshot in time, unique to the events of the Covid-19 crisis and the involuntary reassignment of all students to an online format. In the future, those who do not like online courses can opt-out, if face-to-face instruction is offered.

These findings represent the beginning of research into online learning, not the completion. Future projects should compare and contrast different demographic characteristics (age, major, gender, etc.). Are business majors different from social science majors in their preference for online courses? Additionally, in our survey, gender was omitted from the questions asked. Most research finds gender differences in all areas of education.

Future projects should also target a larger sample, to allow more comparisons of non-traditional students. In addition, future projects should disperse the survey to different regions of the country to gain a more national sample. Our survey only involved a public institution. Do the students at private (or for-profit) colleges have different views/needs for online education? Lastly, future projects should also examine and compare undergraduate students to graduate students. Are online classes favored by graduate students more?

CONCLUSION

The current project found some insight for online courses in higher education, but these results are the start of the discussion, not the end. As we return to normal, post-Covid, we need to acknowledge that while online education is a vital innovation, it is not for everyone. Online students must be self-motivated. Further, some subjects have greater success in an online format. Finally, online is likely to grow because of the increasingly hectic and demanding schedules of our students as they juggle work, family, and education.

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APPENDIX 1: TEXT OF SURVEY QUESTIONS

1. Were you enrolled at the (school) during Fall Semester 2020 or are you currently enrolled in the Spring Semester of 2021?
2. How are you currently classified at (school)?
3. In which college is your major?
4. Are you currently employed during this semester?
5. Are you married?
6. Please choose the category for your family income as accurately as you can. If you do not know the approximate income, please choose I do not know.
7. What is your current age?
8. How many children do you have?
9. Which of the following best describes you? (Race)
10. Are you a first-generation college student? A first-generation college student is someone whose parents did not graduate from a 4-year college.
11. Have you served or are currently serving in the military?
12. Do you personally know someone who has tested positive for COVID-19?
13. Do you personally know someone who has died from COVID-19 or complications from COVID-19?
14. How many online courses have you completed prior to Fall 2020?
15. How many online or extended section courses are you taking in Fall 2020?

Likert Scale Questions:

- Online classes are easier than face-to-face classes.
- Students learn less in an online class than in a face-to-face class.
- Students are less willing to speak their mind in an online discussion than in a face-to-face class.
- Online classes provide better opportunities for students to interact with each other than does a face-to-face class.
- Interactions between faculty and students are better in online classes than in face-to-face classes.

For this statement, please choose Neither agree nor disagree.

- Face-to-face classes provide more opportunities to relate content to real life.
- Online classes provide more flexibility to complete class requirements than do face-to-face classes.
- Students retain more information from an online class.
- There are more resources available to the student in an online class.
- Flexibility is an important feature for me in choosing an online class.
- Quantitative classes are easier in an online course. [Quantitative classes, such as Math, Statistics, Analytics, Accounting, and Programming, depend heavily on numbers and logic. Non-quantitative classes, such as English, Sociology, History, Law, and Management do not depend heavily on numbers or logic and may involve more writing, research, and discussions.]
- Non-quantitative classes are easier in an online course. [Quantitative classes, such as Math, Statistics, Analytics, Accounting, and Programming, depend heavily on numbers and logic. Non-quantitative classes, such as English, Sociology, History, Law, and Management do not depend heavily on numbers or logic and may involve more writing, research, and discussions.]
- Schedule conflicts with family are an important feature for me in choosing an online class.
- Schedule conflicts with work are an important feature for me in choosing an online class.
- Schedule conflicts with other classes are an important feature for me in choosing an online class.
- Online classes are my only feasible option available.
- Medical issues are an important feature for me in choosing an online class.

For this statement, please choose Disagree.

- I am worried about catching COVID-19 by going to campus for class.
- I enjoy online classes.
- Commuting to campus in terms of time and/or expense is an important feature for me in choosing an online class.
- Online classes make group projects easier than a face-to-face class.
- An online student needs to be self-motivated.
- An online student needs to be more disciplined than a face-to-face student.
- Internet access is a problem for me.

Note: There were additional questions in the survey not analyzed in the current project.