

COVID-19: Student Perspectives of the Rapid Switch to Online Learning

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Abstract: As the COVID-19 pandemic spread throughout the world, countries sought to protect citizens from viral spread. Many industries were impacted including academic institutions. One method of controlling the spread of COVID-19 in the United States' higher learning institutions was to dismiss all students from campus and move courses to an online format. Instructors and students at many universities were impacted by this change, especially students in hands-on programs in healthcare. To determine student perspectives regarding the shift to online learning, a 44-question survey was administered to 6,275 full-time students at one university. This single site case study resulted in 867 responses (63%). The survey and subsequent study sought to determine student perspectives during this switch to mandated online learning. From student responses, researchers sought to discover potential relationships, if any, between ease in transition from face-to-face learning to online delivery, and perceived online learning success. Pearson Correlation and ANOVA analyses were performed which yielded a statistically significant relationship between ease of learning and ability to stay motivated in the online environment. Knowing the characteristics of a successful online student is a first step. It may be concluded that student motivation directly influences students' perspectives regarding the shift to online learning. Instructor involvement was shown to be an influential factor in student motivation in the online learning environment.

Keywords— COVID-19, Pandemic, Online Learning, Motivation, Student Perspectives

Introduction

The coronavirus pandemic caused a plethora of issues across worldwide with a large impact on many industries, including educational systems. Many universities had to switch to immediate and rapid online courses delivery due to the pandemic. This was harder on some fields of study than others, specifically challenging to those in healthcare since much of the learning in these programs requires hands on academic training. Overall, the pandemic impacted at least 290 million students worldwide, causing them to enter uncharted territories since many had never tackled online education before (McCarthy, 2020). This research study looks at the student perspectives regarding the mandated switch to online education due to the coronavirus pandemic. Was the transition to online learning easy for students? If not, what were some possible reasons the transition was challenging? What can we learn from students' opinions of the transition to online learning? Information gained from this research study might help improve the educational process during possible pandemics or full online learning in the future. It may also assist healthcare managers in identifying educational gaps in current graduates which might have been caused by online learning when it was used as a means to replace traditional face-to-face methodologies.

Literature Review

COVID-19

The novel coronavirus (COVID-19) outbreak undoubtedly affected nearly every aspect of human life since the virus was originally reported in late 2019. Identified as

one of the most significant public health crises of this generation, COVID-19 has resulted in staggering numbers of positive cases and deaths worldwide (Cavallo, 2020; Johns Hopkins, 2020). The original etiology was unknown, however, following subsequent analysis and research it was determined that the rapidly spreading infection, known as COVID-19, was a result of the SARS-COV-2 virus.

In order to curb the rapid spread of the virus, drastic public health interventions were put in place in early 2020 in an attempt to prevent a spike of the disease and a subsequent overwhelming of the healthcare system. These interventions varied significantly between cities, states, and countries. Common interventions implemented worldwide included social distancing, widespread closures of non-essential businesses and schools, increased attention towards hand washing and sanitization, travel bans, and stay at home orders. While the use of public health interventions was shown to be initially successful at reducing the outbreak of COVID-19, it was not without massive hardships and losses (Pan, 2020). Educational institutions, from school districts to universities, were forced to move traditional face-to-face instruction to an online format. With schools closed, some students were left without housing options while others had to adapt and become comfortable learning from their homes instead of a structured classroom.

The change to online learning came rapidly and unexpectedly for some, as students returned from their 2020 spring break vacations to learn that they would not be returning to traditional learning. As some students rejoiced that they had another week off from school, institutions frantically attempted to move course work online and others feared the long-term implications these changes might have questioning if student learning would suffer as a result. Most

institutions saw this change as a temporary measure and planned for students to return to traditional in-class learning. This was not the case in many circumstances. Although many educational facilities now have opened their doors back for face-to-face learning, the debate about the safety of students and the spread of COVID-19 in educational environments continues (Axelsson, 2021).

Online Learning

Online learning has expanded exponentially over the last 10-15 years. Snyder, Brey, and Dillow (2018) reported that undergraduate students taking at least one online course increased from 15.6% to 43.1% between 2004 and 2016 with an increase of 6.1% to 27.3% for graduate students. With the arrival of a global pandemic online education seemed to be the solution for higher education institutions eager to decrease transmission of the virus while also delivering quality instruction.

Online learning has taken various forms. Learning can occur asynchronously through the sharing of written content, pre-recorded video, PowerPoints, and online exams in which students can complete on their own time or at prearranged times. Online learning can occur synchronously which mimics traditional instruction with a live classroom setting in which students can electronically raise hands for questions with real-time feedback. Online learning can also occur through a blend of asynchronous and synchronous instruction.

There are advantages to both forms of instruction from the students' perspective. Bonnici, Matta, Klose and Julien (2016) studied graduate student preferences between synchronous and asynchronous comparing responses between two universities with cross-enrolled courses. Heuberger and Clark (2019) surveyed students enrolled in an online clinical nutrition program that offered both forms of instruction and Wall Parilo and Parsh (2014) performed a quantitative study of baccalaureate nursing student perceptions of live lecture compared to recorded lecture in specified nursing courses. From these studies, student perceptions of asynchronous and synchronous online instruction emerged. Students overall reported that asynchronous instruction provided convenience and increased learning with repeated viewing of information (Wall Parilo & Parsh, 2014; Heuberger & Clark, 2019; Bonnici, et al., 2016). The students in Wall Parilo & Parsh's study also reported improved sleep due to the ability to watch lectures whenever they were rested (2014). In relation to synchronous instruction, students stated value to more interaction with faculty and a more personal connection with the thought that, since faculty can see them, the faculty knew who they were. Students also voiced a feeling of connection among their peers and more social networking in real-time. Real-time question and answer periods and increased accountability were reported as advantages of synchronous instruction as well as increased ability to focus, perceived higher levels of learning, opportunities for practical applications in learning in groups as well as student collaboration in learning (Heuberger & Clark, 2019; Bonnici,

et al., 2016). Interestingly, students involved in Heuberger & Clark's (2019) and Bonnici, et al.'s (2016) research study stated that a combination of both methods of instruction (a hybrid approach) may be optimal identifying technology ease with scheduling and navigation as well as learning style accommodation.

The Online Student

As the COVID-19 pandemic began to ravage through the United States, face-to-face learning at colleges and universities around the country came to a screeching halt as online education was mandated due to stay at home orders being put into place to decrease the spread of the virus. Around March 2020, more than 150 countries closed education institutions worldwide, impacting over 80% of the world's student population (Sahu, 2020).

While the move to online learning was likely necessary, online learning has caused significant hardships for some students. Technology issues like login problems, downloading errors, and complications with audio and video on pre-recorded class lectures created problems that frustrated students. Because of these technology issues, students began to pay less attention and lose patience with their online learning experiences (Dhawan, 2020). Online learning sacrificed the face-to-face interactions that are vital for some students. Some of the most impactful learning experiences can come from listening and engaging with other students in the classroom setting. Most students tend to find online learning dull and unengaging as well. Although online learning offers flexibility, it can lead to students avoiding or struggling to complete required course work.

Undoubtedly, there will be numerous studies launched to determine the educational outcomes of students forced to switch to online learning due to the pandemic. To determine these outcomes it is helpful to first understand the characteristics of a successful online student. Online education may not be a suitable learning format for every student. Those who tend to perform well in online courses are likely motivated and driven to succeed. They do not need to be pushed or overly monitored to complete their work. A successful online student holds several characteristics that set them apart from others:

1). The ability to communicate through writing. In the online setting, most assignments and communications occur through writing. A successful online student is effective in expressing themselves in writing and is comfortable doing so as written communication is one of the most critical competencies for academic success (Sparks et al, 2014). Many students fail to achieve this as most are limited in their writing abilities (University of Illinois Springfield, 2020).

2). The ability to be self-motivated and self-disciplined. The freedom and flexibility that comes with the online education format can create problems if students begin to fall behind in the class. Again, online learning is not for all students. The student must be highly motivated and able to

regulate their own learning in the online environment (Quesada-Pallares et al, 2019).

3). The ability to set and follow a schedule. As previously mentioned, the flexibility of an online class may become an obstacle for students if they procrastinate on completing coursework. A successful online student creates a consistent schedule to complete their course work daily. This should help in preventing the student from becoming overwhelmed with course deliverables and expectations (University of Cincinnati Online, 2020).

4). A good study environment. The ability to be free of distractions is key to becoming a successful online student. Students should create a peaceful and quiet study space that is away from distractions like cell phones, televisions, and family members (Mt. Hood Community College, 2020).

Methodology

As the rapid change in learning format forced students into the online learning environment, it was suspected that students were hesitant, and even resentful with the change. This research aimed to determine students' overall perspectives of the change to online learning and answer the question about the ease in transition to online learning for students. If the transition to online learning was not perceived as easy, then were the students more likely to struggle with finding motivation to complete their work? Additionally, this research analyzed the relationship between various student learning traits and individual success in the online environment. Specifically, if students perceive instructors as engaged in the online course, does it promote motivation in students? Finally, this study sought to determine where improvements could be made to assure student success in online offerings in the future.

Research Model/Design

Researchers utilized a cross-sectional survey to capture student attitudes toward online learning, student engagement, and faculty support during the COVID-19 pandemic. In order to determine the effect of the transition to online learning on university students in this single site case study, both correlation and analysis of variance (ANOVA) analyses were conducted. For all of the testing, the independent variable was reflective of the survey question: "Was the transition to online learning easy?" This question was then tested against seven other survey questions, acting as the dependent variables, to determine if a relationship was present between the two variables. The seven dependent variables studied included: (1) modality of program, (2) motivation to complete work online, (3) perceived effectiveness of the transition to online learning, (4) instructor involvement, (5) age, (6) gender, and (7) ethnicity.

Data Collecting Tools

In order to obtain the students' perspectives on various topics related to COVID-19 and online learning, a 44-question survey was created. The survey consisted of a mix of multiple choice, Likert scale, short answer, and demographic questions; students could discontinue participation at any time throughout the survey. The survey and email correspondence sent to the students were both approved by researchers' human subject committee. Students received two emails: (1) an initial inquiry inviting them to voluntarily participate in the research or to opt out of future communications and (2) unless the student opted out of the research via email, a follow-up email was sent two weeks later. The survey was closed and results analyzed two weeks after the follow-up email was sent, allowing students four weeks to complete the survey.

Sampling or Study Group

Mid-size, mid-west university students were the subjects of this research study. A Freedom of Information Act (FOIA) request for emails of students enrolled resulted in 6,275 students for the sample population. This sample included full-time, undergraduate, graduate, and doctoral students of the academic institution, and included students from multiple programs including those in healthcare related academic programs. There were 867 (13.82%) students who participated in the survey. A completion rate of 63% (n=548) was achieved for the analysis.

Data Analysis

The participant demographics were categorized by gender, age, ethnicity, and whether learning modality was on-campus or online. Results indicated 62.1 % female; 35.7% male; 1.5% as other and .7% preferred not to answer. The mean age for participants was 22.56 years with 58.7% in the range of 20-29 years of age. Ethnicity for the respondents reflected 76.7% Caucasian, 9.3% African American, 5% Asian American, 4.9% Hispanic and 4.1% as other. In this study, 82.3% of the respondents reported they were enrolled in on-campus, face-to-face delivery as their primary teaching modality vs 17.7% for online prior to COVID-19. The predominant make-up of the cohort indicated 22-year-old, white female, with on-campus course delivery. A question was asked to determine current opinions of online learning which indicated 44.3% of the respondents who had taken an online course previous to spring 2020 either strongly disliked or disliked online learning. A little over a quarter of the respondents (28.5%) indicated they either enjoyed or strongly enjoyed online learning.

Validity and Reliability

Internal validity and external validity were strengthened by the randomness of the sampling selection and the manner in which the survey was distributed. The questionnaire was sent to the entire undergraduate student body during the summer semester of 2020 (N=6275) as a Survey Monkey link

with no other exclusion criteria. The response rate of 13.82% and completion rate of 63% added to the validity of the sampling. In addition, the survey opened and closed at the same time on the same date for all participants.

The sampling was representative of the university’s enrollment at that time, further strengthening internal validity. When comparing demographic data of the university to the study respondents, the percentage of participants related to gender and culture/ethnicity are representative of the university. In comparing gender, the university reported 52.8% men and 46.4% women enrolled during 2019-2020 compared to our sampling of 35.7% men and 62.1% women. In relation to culture and ethnicity, the university reported an enrollment of 67.6% white, non-Hispanic students, 13.8% Black or African American, non-Hispanic students, 1.9% Asian, 9.6% Hispanic and 3.7% other (Southern Illinois University, 2020).

A potential threat to validity may or may not have been the nature of the situation which existed during COVID-19. As previously stated, businesses were closing and people were encouraged to remain at home under quarantine while the cases of COVID-19 were growing in number in the study region. Physical, emotional and psychological stress experienced by undergraduate students who were expected to switch from face-to-face instruction to online instruction may have impacted the survey in number and intensity of responses. Reliability was established by running the internal consistency coefficient of Cronbach alpha for the self-developed inventory which resulted a score of .596 which is considered acceptable, but admittedly weak.

Research Procedures

The results were compiled from Survey Monkey following the deadline. Once collected, the data was organized and uploaded into SPSS.v26 for analysis. The researchers used descriptive and frequency distributions for primary review. Correlation analysis was utilized to determine any relationships between targeted variables and Analysis of Variant (ANOVA) was used to determine any differences among the subgroups.

Findings and Discussions

Table 1 indicates the degree of ease a student may have experienced during the transition to online learning due to the COVID-19 emergence. Statistically, 59.5% of the respondents strongly disagreed or disagreed to the notion that the transition to online learning due to COVID-19 had been easy while 23.2% agreed or strongly agreed with the question. The results sparked further investigation into what might have been a factor in determining the respondent’s degree of ease. An ANOVA was performed to determine whether the locality of program prior to COVID-19 (on campus program vs. online program) was a possible factor. In other words, were

those who had not had online courses prior to COVID-19 more likely to feel the transition to online coursework was more difficult than those who had successfully completed some online courses prior to the pandemic. The result ($F_{df1=.100}$; $p=.753$) indicated no significant influence on ease of transition between those who reported as only participating in on-campus coursework vs. those reporting as previously participating in an online coursework.

Table 1 - Degree of Ease During Delivery Format Transition

Variable		Frequency	%	Valid id %	Cumulative %
Valid	Strongly Disagree	181	21	26.9	26.9
	Disagree	220	25.6	32.6	59.5
	Neither Disagree nor Agree	117	13.6	17.4	76.9
	Agree	109	12.7	16.2	93
	Strongly Agree	47	5.5	7	100
Total		674	78.3	100	
Missing	System	187	21.7		
Total		861	100		

Researchers then performed an ANOVA factoring in gender. Gender, as a factor to the degree of ease for transitioning to an online modality due to the COVID-19, appears to have no significance ($F_{df3=1.173}$; $p=.319$). An ANOVA was completed to investigate the interaction between age and the degree of ease of transition to an online modality and the results indicated a significant difference ($F_{df4=7.610}$; $p<.001$) among age groups. Due to the dispersion of ages with the participants, the researchers created subgroups for the variable age; including 17-19; 20-29; 30-39; 40-49; and over 50. A Bonferroni post hoc analysis revealed differences among subgroups 17-19 and 20-29 ($MD=-.394$; 95% $CI=-.74$ to $-.05$; $p=.014$); 17-19 and 30-39 ($MD=-1.143$; $CI=-1.84$ to $-.45$; $p<.001$); 20-29 and 30-39 ($MD=-.749$; $CI=-1.41$ to $-.08$; $p=.016$). Table 2 indicates a difference $F_{df4}=2.416$; $p=.048$ regarding ease of transition and ethnicity of the respondents. Post hoc tests are used to confirm where differences occurred between the groups and ran when the ANOVA test indicates an overall statistically significant difference in group means (i.e., a statistically significant one-

way ANOVA result). Post hoc tests attempt to control the experiment wise error rate (usually alpha = 0.05) in the same manner that the one-way ANOVA is used instead of multiple t-tests.

Table 2 - “The transition to online learning due to COVID-19 has been easy” compared to ethnicity.

Variable	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.227	4	3.807	2.416	.048
Within Groups	795.832	50	1.576		
Total	811.059	50			

Using the Tukey HSD and Games-Howell models, the post hoc tests comparing the ease of transition to online learning with ethnicity showed no statistical difference in the group even though the ANOVA test indicates an overall statistically significant difference in the group ($F=2.416$; $p=0.048$). The researchers concluded that due to the p-value so close to the significant level (0.05), the post hoc test did not show there is a difference among the groups.

Since the test did show there was no difference in the group, the researchers ran (Pearson) chi-square (Contingency Table Analysis) as a second analysis to make sure the result were consistent. The Chi-square statistic is a non-parametric (distribution free) tool designed to analyze group differences when the dependent variable is measured at a nominal level (Beasley & Schumacker, 1995). As known, adjusted residual value is a Z score which needs to be greater than 1.96 to be accepted as significant. The result above shows that some of them in the group are significant, but there is still a need of P-value to control Type I error. To create a P-value, the following steps are followed; (1) Z-score was transformed into actual Chi-Square values by multiplying z-score by each other, (2) then, this Chi-Square value was computed to get a p-value for each Chi-Square value created (Table 3), and (3) the new p-value was compared with Bonferroni adjusted P-value by the formula (0.05/25) in order to find out the significance in the group.

As a result, none of the variables fit into the significant level demonstrating the first methodology used lacked an overall significance level among the group. This is a rare result, but both models indicate the same outcome.

Table 3 - Ethnicity and “ease of transition to online learning”.

Chi-Square Tests

Variable	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	36.810 ^a	16	.002
Likelihood Ratio	33.472	16	.006
Linear-by-Linear Association	7.879	1	.005
N of Valid Cases	510		

^a 10 cells (40.0%) have expected count less than 5. The minimum expected count is 1.65.

The researchers asked the participants to identify their biggest concern regarding the transition to online learning from a list of choices; Table 4 highlights those responses. Interestingly the inability to stay motivated (27%) was the top concern followed by lack of in-person interaction (25.6%) and third category of concern was lumped in to an “other” category (12.3%).

Table 4 - Survey results: “My biggest concern about the transition to online learning was/still is”.

Variable	Frequency	%	Valid %	Cumulative %
Valid				
Managing distractions	77	8.9	9	9
Lack of a consistent schedule	76	8.8	8.9	17.9
Lack of in-person interaction	219	25.4	25.6	43.6
Technology issues	81	9.4	9.5	53
Inability to stay motivated	231	26.8	27	80.1

Trouble juggling school, work, family	64	7.4	7.5	87.6
Other	106	12.3	12.4	100
Total	854	99.2	100	
Missing System	7	.8		
Total	861	100		

To further investigate respondents' concern regarding lack of motivation, analysis was conducted on the question "It is very hard for me to motivate myself to complete my work." A total of 44.3% of the respondents agreed or strongly agreed while 32.8% disagreed or strongly disagreed with the statement. A Pearson Correlation was conducted between "motivate myself to complete my work" and "ease of transition" which yielded an $r_{509}=.431$, $p<.001$. This indicated a moderate correlation between the ease of participants' transition to online learning and their degree of motivation. Following the results of the analyses, the researchers investigated the association between ease of transition to online learning and support provided by student instructors. Correlation results indicate a moderate association; $r_{670}=.313$, $p<.001$. Online learning support provided by student instructors and student motivation yielded a correlation of $r_{526}=.192$, $p<.001$ indicating a weak association between instructor support and student motivation.

While nearly 60% of respondents reported disagreeing or strongly disagreeing that the transition to online learning had been easy, 41% reported disagreeing or strongly disagreeing to the notion the transition had not been effective with 31.2% agreeing or strongly agreeing the transition had not been effective. A Pearson Correlation was conducted between "transition to online learning had been easy" and "transition to online learning had not been effective" yielded an $r_{667}=.479$, $p<.001$. This indicated a moderate correlation between the ease of a participants transition to respondents' perceptions on how effective the transition has been.

This study was conducted on university students, but researchers believe future studies should be conducted involving online trainings often utilized by employers, including healthcare professions, for employee mandated education. The issues related to motivation along with online education could be relevant, especially in fields such as healthcare where continuing education units and/or patient care trainings are relevant to the delivery of quality patient care.

Conclusion and Suggestions

The transition to online learning has clearly been more difficult for some students compared to others. This difficulty

might be attributed to various factors from age and gender, to work style and professor involvement, but the results were inconclusive as to the full effect these variables had on students' overall perspective of online learning due to COVID-19. More research is needed on a larger and broader sample population to determine if significance among the variables studied might change. However, with the presented data, it appears that student motivation in relation to the ease of the transition to online learning and instructor involvement in the online environment did produce a significant correlation. Given this information, instructors can place an increased focus on improving student engagement in the online classroom. Examples of ways to increase student engagement, based on student responses in the survey, include live-recorded lectures that can be re-watched, flexible due dates, and open access to the class to be able to work ahead. Additional ways to increase student involvement and promote student motivation can come from a proactive collaboration with students and instructors where the two groups work together to create an environment that is successful for both entities. As professor involvement was correlated to student motivation, professors need to actively communicate and engage with their students in the online classroom to help reduce disengagement from students.

All these findings correlate with the findings of Bonnici, et al. (2016), Heuberger and Clark (2019) and Wall Parilo and Parsh (2014). Before the global pandemic, students identified these same factors as contributors to a more positive experience with online instruction. The asynchronous mode that encompasses flexibility and accessibility on off-times along with synchronous activity that promotes active faculty-student engagement produces motivation to learn. As identified by Quesada-Pallares et al, (2019), self-motivation is a strong factor in students' overall success in the online environment. When faculty are actively involved in online learning, pandemic or not, students can succeed. Although these studies may not necessarily be generalized to employer/employee engagement, there are still lessons to be learned where learner preferences might be applied to healthcare managers delivering employee training and/or continuing education units to healthcare professionals.

Future research will be aimed at expanding the current body of knowledge. Studies focusing on the impact of COVID-19 on community college students may produce differing results considering the demographic pool can vary significantly compared to four-year institutions. Future research could also target the variation of perspectives by area of study to determine if students in a certain field are able to adapt to changes quicker than other fields. Additionally, a large-scale analysis of several institutions of various sizes could show the impact different schools and/or implementation methods had on students' overall perspective of the shift to online learning. The impact of the push to online education during the pandemic is yet to be fully seen as far as what gaps might occur regarding workforce readiness of graduates. This may be especially concerning in fields of healthcare.

Although many universities are operating more closely to normal as of the writing of this paper, the aftermath of the mandated switch to online coursework is still concerning. As universities try to adapt to ongoing and rapid changes associated with the pandemic, it will be important to recognize and address the common issues students had with the online environment to ensure successful learning. It will take a group effort from students and faculty to come up with the best way to deliver an online class in the most efficient and effective way possible, which then also may trickle into their workforce readiness in a variety of fields, including healthcare.

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