

“How do behaviors of college students differ in online versus face-to-face classes”

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Introduction

When the Covid-19 pandemic first broke out transcontinentally, life came to an abrupt halt, and universal ideas of “essential” and “routine” transformed. Those who worked in offices started to work from home, schools shut down, forcing kids of all ages to do school from home. Arguably one of the most challenging transformations was with the educational systems across the globe; teachers and students, alike, were forced to adapt rapidly. With classroom settings becoming completely digital, students’ behaviors and thoughts about their traditional classroom setting evolved to reflect this new learning environment. Building upon the existing literature and the theory of diffusion of innovations, the present research adds findings from surveying and interviewing measures to investigate how the behaviors of college students differ in online versus face-to-face classes.

Literature Review

Online learning, which typically occurs within the context of non-traditional settings, creates unique challenges and distractions for those pursuing higher education. Research shows that many online students face struggles and distractions that typical university students do not (Santelli, B., et al., 2020). As a result, the present research is important to study in order to shed light on the behaviors that students have adopted in light of switching to online learning. One such measure of these behaviors includes performance, which, for the purposes of this study, is defined as a students’ grades and GPA. Additionally, this research recognized the two most common types of online learning: synchronous and asynchronous instruction. Synchronous style learning requires students to meet via an online platform at a scheduled time to participate in class, whereas asynchronous instruction allows students to work through instructional materials for the week on their own time. Therefore, these variables are being studied together because a students’ performance may be impacted by the course format, which may subsequently provide

insights into the necessary adaptations students have made in order to compensate for these differences in course delivery methods.

In order to understand the challenges that online students may face, it is important to consider the varying demographics that they come from. Online students may be balancing unique time commitments, such as working a full-time job or raising children, while attending online class. In addition to balancing these other roles, online students tend to be combating distractions, such as phone calls or household chores (Blasiman, et al., 2018). Differences in diversity and various backgrounds also have complex impacts on the success of online learning. For example, students who come from a lower socioeconomic background, or who live in rural locations, may have more difficulty gaining access to reliable internet and technology (Purushotham, et al., 2020.). In fact, among those students who had their classes moved to an online format due to the pandemic, 16% stated that connecting to the internet interfered with their class participation and 29% expressed that they experienced an occasional internet disruption (Miller, 2021). Factors such as socioeconomic status and students' location may also influence the challenges that students face, contributing to their perceptions of online learning as positive or negative (Purushotham, et al., 2020). Research shows that students, in general, tend to hold negative attitudes towards online learning, as many have said it did not facilitate their studies, improve communication with other students or professors, improve the value of the course, or improve their ability to solve problems related to the course (Keller 2002).

Since online learning environments therefore present students with challenges that otherwise would not occur in traditional face-to-face settings, such as technological problems, and web platforms facilitating social disconnect, motivation to be successful in classes has decreased. Of all the students who attended online classes during the pandemic, 42% stated that

they experienced a major problem with being motivated to complete coursework online (Miller, 2021). Additionally, it is important to note that students who are previously familiar with computers should not be expected to be more positive towards e-learning than other students (Keller 2002). Students also reported feeling more motivated and engaged in face-to-face classrooms when there were not just verbal communication cues, but nonverbal communication cues as well; signals such as direct eye contact and the freedom of the professor to walk among the desks of students were significant contributing factors to engagement level (Faulkner, S. L., et al., 2020).

Despite the challenges and distractions that online learning environments can create, there are a variety of different tactics students and professors can implement to create a more positive learning environment. Researchers found that creating a strong sense of community and connectedness along with professor availability can aid in student success and retention (Korstange, R., et al., 2020). Supportive communication, both verbal and nonverbal, contributes to a stronger and more engaging classroom environment, too (Faulkner, S. L., et al., 2020). Online learning and technology can also create a barrier between professors and students if professors are not proactive with reaching out. In fact, professors who connected with their students before the class began and established a connection with them by welcoming them into the online college environment were found to have fostered a sense of belonging and strengthened students' sense of purpose (Korstange, R., et al., 2020). Students want to feel like they belong and professors can respond to this need by developing a strong relationship. Additionally, professors who continued to enforce guidelines for their students aided the students' motivation and achievement accountability (Korstange, R., et al., 2020; Santelli, B., Robertson, et al., 2020). The presence of professor immediacy has also proven itself to contribute

to motivation and affective learning; cues such as self disclosure, checking in on how students were doing, and referring to students by name are all examples of a better perceived learning environment (Faulkner, et al., 2020). Professors who are able to effectively communicate with students and explain standards achieve greater engagement in an online learning environment.

Furthermore, studies show that institutions that establish intentional communication with students and create meaningful social connections build greater engagement (Korstange, R., et al., 2020). In light of the research findings, studies also highlight the importance of being aware of potential issues for students surrounding online learning. By directly addressing students' perceptions of online learning, through the creation of a personalized experience for each student and by undergoing IT training, professors can navigate these potential issues to ensure a more positive learning environment (Purushotham, et al., 2020). Therefore, by examining issues that have arisen because of online learning, students' perceptions towards these issues, and solutions that might mitigate some of these challenges, the research provides insight into how students have reacted to online learning in the past. This then allows for a greater understanding of the behaviors students may have adopted in online versus face-to-face classes, as well as how these adjustments have impacted their overall engagement and performance in the classroom.

Theories of technology acceptance are relevant to the present study, especially because students' attitudes and level of comfortability with new technology may play a major role in determining what behaviors they adopt in regards to their experience with online learning. In the "Students' Perceptions of E-learning in University Education" (Keller 2002) article, a general framework of technology acceptance by Rogers (1995) was described within the theory of diffusion of innovations. This theory included different "adopter" categories which were defined as innovators, early adopters, early majority, late majority, and laggards. Though there was no

relationship found between students' perceptions of e-learning and their learning style (Keller 2002), the inclusion of these adopter categories in previous research acknowledged the consideration built upon existing literature from Jonassen & Grabowski (1993) that stated, "Individuals differ in their general skills, attitudes and preferences for processing information, constructing meaning from it, and applying it to new situations."

Therefore, the theory of technology acceptance helps explain students' perceptions and adds to the established findings that these perceptions were negatively related to attitudes to new technology. Students identifying themselves as innovators or early adapters were more negative than other adopters (Keller 2002). It is also worth considering that 60% of the students in the (Keller 2002) study identified themselves as innovators or early adapters, which is greater than the 16% previously identified within the literature; this may also be representative of the university sample from which we drew for the present study, since many students who are currently enrolled in universities are part of a generation that grew up with various forms of technology, possibly making it easier for them to be early adopters of online learning. Thus, with the theories of technology and prevalence of young adults who generally tend to show an acceptance towards technology, it is worth considering the impact that these adopter categories have on students' behavior and performance in an online setting. Students have the ability to embrace technology, but it also depends on how the technology is presented and used within the institution.

Methods

Participants

For this study, 105 students enrolled in a college or university served as participants. This sample consisted of 59% females and 41% males, with the average age being 19.6 years old. The majority of the sample was White/Caucasian (92.4 %) with the rest being comprised of Hispanic/Latino (1.9%), Multiracial (1.9%), Black/African American (1%), Asian/Pacific Islander (1%), Native American (1%), and Other (1%) individuals. Additionally, to be considered for the study, all of the participants were required to have participated in at least one online or hybrid, both online and in-person, college course as of Summer of 2020.

Procedures

Students, who had taken an online or hybrid class, were asked to participate in a short survey that asked about their experience with online learning. Specifically, the students were asked to respond on challenges and benefits of online learning, academic relationships with others, and their preference on class format. Additionally, the researchers conducted 25 in-depth interviews with students who are currently enrolled in a college or university but not involved in Communication and Research Methods 180B. A transcript of each interview was recorded.

Measures

This study utilized both a survey and structured interview to gather results around the question of online learning compared to face-to-face learning. The survey component consisted of three questions reflecting the demographics of the participants surveyed. These questions gathered information about the participants' ages, genders, and races. This baseline allowed for the study to understand the basic background of who partook in the survey. The following set of five category questions relating to enrollment in college, specific major, grade level and GPA

were focused on categorizing this group of college students. Survey participants were able to personally write in their major, select options of freshman through senior for their grade level, and rank their GPA from 2.0 to 4.0. The last category questions asked about homework. Participants answered a question about the amount of time they spent on homework, with answers ranging from less than 1 hour to 9 or more hours. The final question in this category asked participants to identify which device they use for homework with options including: a smartwatch, tablet, laptop, or smartphone.

In addition to the demographic and category questions, the survey implemented interval measures for the survey participants to use eighteen Likert scale questions to determine their opinions. Items were based on a 1-5 scale where (1) = strongly disagree and (5) = strongly agree. The Likert scale component of the survey had possible scores ranging from 1 to 5, where higher scores indicated more agreement. The Likert scale questions varied in structure where some questions were focused on the effectiveness, ease, and attention of online learning compared to face-to-face learning. Survey participants also were asked to scale their feelings of motivation, stress, and mental health relating to their schooling experience. The final set of Likert scale questions looked at the survey participants' relationships with fellow students and professors and if those relationships increased or decreased with online learning. The questions in the Likert scale section were largely opinion-based which means a distinct scale is necessary to be a constant for participants.

Along with the survey sent out to college-aged participants, the researchers conducted a fully-structured interview to gain more data. This interview contained specific opening and closing statements and ten pre-determined questions for the interviewer to ask. The interviewer was tasked with reading off the script for the interview, following the questions in the

predetermined order. These interview questions mirrored the survey questions but allowed for more open-ended responses and insights from the interviewee. Interviewers were able to collect a personalized transcript that was a direct reflection of the interviewee's adopted behavior from experiencing both online and face-to-face learning. With the full-structured interview format, the researchers were able to collect more standardized and organized responses to easily compare between different interviews.

Results & Discussion

Attention/Engagement

When comparing student engagement between online and face-to-face learning, it was found face-to-face learning is associated with greater engagement. In regards to the statement "I find it hard to pay attention in virtual classes," on a scale from 1 to 5, with 1 being strongly disagree and 5 being strongly agree, students reported a mean of 4.28, meaning they find it hard to pay attention in virtual classes. Additionally, the average respondent disagreed with the statement: "I pay more attention in online classes than I do in face-to-face classes." In fact, on average, the reported response was 1.73, meaning most students do not pay more attention in online classes than in face-to-face classes.

To further reiterate this finding, in the conducted interviews, participants noted feelings consistent with the interview data. When reflecting on online learning, one participant claimed, "I'll be reading emails, or online shopping, or doing something until I make myself stop. But then, I just get distracted with all the stuff on my desk around me. So, I feel much less engaged in the class even when I'm really trying to stay engaged." The participant continued, "I feel like my focus in an online setting is way lower than it would be in a traditional setting. I am so very unfocused and it is awful and I'm always mad about it." Another participant discussed liking the

face-to-face engagement from professors and fellow classmates, commenting on the convenience and greater engagement from all.

This same student even suggested, one of the most effective ways professors can elicit effective learning in the online setting is to “make sure everyone’s engaged.” The interviewee continued, “make it fun; make it a fun learning environment cuz sitting in front of your computer screen isn’t necessarily the most engaging or fun thing to do so just try to spice it up and keep the kids interested in what they’re learning.” Another participant suggested that professors should “really include the students, and like make sure that their cameras are on, and like, not cold-call, but really push them to like still interact with the class.” By creating an engaged learning environment free of distractions, students are more likely to learn the course material and enjoy online learning.

Schedule Flexibility/Ease

Another notable finding of this research study was a correlation of students who have more years of schooling reporting that, with online learning, they have more schedule flexibility than students who have less years of schooling. On a scale from 1 to 5, where 1 indicated strongly disagree and 5 indicated strongly agree, the reported response on average was 3.97, indicating that participants generally agreed with the statement “Online learning allows me to have a more flexible schedule.” This finding connects to some of the responses from our interviews in which students commented on how one of the benefits of online learning was extra time to complete things: “So whether it’s doing an assignment or an exam, having a buffer of extra time to study, do projects, or communicate with people just benefits me overall on certain tasks to do better in the class.” Other commonalities that appeared across the interviews were the geographic convenience of being able to do online learning from anywhere, allowing students to

be punctual about making it to class on time. Additionally, one of the common behaviors that appeared as a result of this flexibility, was the opportunity to rewatch recorded lectures if students didn't understand something or wanted to go back through material at their own pace.

However, the benefits of having greater schedule flexibility also seemed to pose challenges for students in terms of time management. Because students often have more time in online learning than in traditional face-to-face, it allows for procrastination if students are not intentional about their use of time, which appears to be affected by the method of online course delivery. Students noted that in terms of synchronous style learning, it limits procrastination that can result from not being in face-to-face learning because "if I don't have a set schedule or a time that I need to do something by, then I wait until the last day to do it." As a result, when a course is completely autonomous, or asynchronous, students find it difficult to keep up with their motivation to actually do the course work and watch all the lectures fully through: "Sometimes, I just skip through and take the notes that I think I need to take." This finding also connects to previous research because, compared to a face-to-face setting, students reported feeling decreased motivation in online learning. In particular, when using a scale of 1 to 5, where 1 indicated strongly disagree and 5 indicated strongly agree, the reported response on average was 2.14, indicating that participants tended to disagree overall with the statement: "I feel more motivated to do well in school when I am learning online."

Performance

Interestingly, while students felt they had decreased motivation while learning online, they still tended to perform well in their classes. Results from the conducted survey showed that the increased time that comes with online learning actually benefited students in terms of having better grades as a result. In the conducted interviews, one student specifically attributed online

learning to improving their scholastic achievement, “online learning has had a positive influence on my academic performance because there is more time to deal with homework and exam work. Especially since a lot of the online classes have exams online with longer time frames, it gives me more than enough time to review the material on exams, put in my best work, go back and review what I did, and edit my answers.” Additionally, another interesting result from the interviews was one student’s recognition that online learning may have even been a factor in making the Dean’s List this past fall: “While I don’t know necessarily know if it has anything to do with the hybrid learning or the classes I was taking, I really put in more effort into my classes, and that might be because they were half-hybrid and half in-person, but it has actually helped my grades.” These responses were also consistent with the survey results from this study which showed that, on a scale of 1 to 5, where 1 indicates strongly disagree and 5 is strongly agree, the reported response on average was 2.67, indicating that participants actually tended to agree with the statement “My grades are better when I learn online than they are when I learn face-to-face.” There was also an interesting correlation result that was statistically significant, which showed that students who have more years of schooling are more likely to have better online grades than students who have less years of schooling.

Effectiveness of Online Learning

Even though online learning yielded positive results for some students, research shows that face-to-face learning is more effective than online learning. In the conducted survey, students reported that, on a scale of 1 to 5, with 1 being strongly disagree and 5 being strongly agree, face-to-face learning was effective at a mean of 4.53, meaning nearly all participants felt face-to-face learning is an effective form of education. On the contrary, the same survey data showed a mean response of 2.88 when asked if online learning is effective, meaning most

students are indifferent about the effectiveness of online learning. Overall, students' preferences toward face-to-face learning is supported by existing research done by Keller (2002), which has shown that students, in general, tend to hold negative attitudes towards online learning. However, our research contributes to the existing literature because although there was a greater mean response rate of students who tended to prefer face-to-face learning over online learning, online learning did positively facilitate students' behaviors related to motivation and performance.

In combination with one another, these findings help to answer our research question because they shed light on the various behaviors students engage in during online and face-to-face learning. In particular, students feel less engaged during online learning, leading to greater overall distractions and procrastination tendencies, as well as decreased motivation to learn the course material. Though these findings add new insights to the existing research surrounding course delivery methods, it is worth acknowledging that many of the survey results specifically related to attitudes toward online learning, rather than on how students' behaved as a result of these feelings.

Conclusion

Maintaining a conscious awareness of the unique circumstances and challenges that both students and professors face in online learning facilitates an environment where students will be best suited for academic success in the future. Previous research has contributed to existing knowledge surrounding the challenges of online learning, as well as students' perceptions and attitudes toward these challenges. The present study has added to these findings by providing insights into how these challenges have shaped students' behaviors as a result. With regard to such factors like schedule flexibility and ease, it can be concluded that online learning does facilitate some advantages that traditional in-person learning does not. However, with respect to

attention, engagement, and overall performance, ultimately a face-to-face learning environment provides the most effective learning experience for students. With the addition of survey and interview results to the preexisting literature, the data indicates that students experience a decrease in engagement and overall negative attitudes towards the adaption to online learning. Although online classes have been the best alternative method to traditional learning within the context of the pandemic, it is vital that, as society moves forward from this health crisis, the education system continues to learn from the challenges students have faced with online learning and implements the found strategies to improve the quality of current and future students.

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