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Investigating the Impact on Student Engagement from Converting Face-to-Face Classes to Online in Response to Covid-19

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Abstract - Paper investigates the impact on student engagement from converting traditional face-to-face classes to online in response to Covid-19. In particular, this study investigated the impact of conversion to online on four different types of student engagement: (1) participation engagement, (2) emotional engagement, (3) skill engagement, and (4) performance engagement. Survey data were collected from 160 business students who had their face-to-face classes converted to online due to Covid-19. Results of study show that all four types of student engagement significantly declined when classes were converted to online. Participation engagement declined the most while performance engagement declined the least. Non-traditional students had significantly larger declines in participation engagement and skill engagement than traditional students. Those who prefer face-to-face classes had significantly larger declines in all four types of student engagement than those who prefer online classes. Extroverts had significantly larger declines in participation engagement, emotional engagement, and performance engagement than introverts. Gender, ethnicity, rank of student, type of class, and experience with online classes did not influence the decline in engagement when classes were converted to online. Recommendations on ways to improve online classes and ways to improve student engagement in online classes are provided.

Keywords - Covid-19, online classes, student engagement, participation engagement, emotional engagement, preference for online classes, non-traditional students, and personality.

Relevance to Marketing Educators, Researchers and/or Practitioners - Paper provides insights on how the conversion of face-to-face classes to online impacted student engagement. Paper extends the student engagement literature by investigating a new phenomenon of abruptly converting face-to-face classes to online. Paper provides suggestions and recommendations to help professors increase student engagement in online classes.

Introduction

The Covid-19 pandemic led to the physical closing of colleges and universities around the world (Day, Chang, Chung, Doolittle, House and McDaniel, 2021). According to UNESCO, almost 1.2 billion students from 194 countries became remote learners in April 2020 (https://en.unesco.org/covid19/educationresponse). Converting face-to-face classes to online was an efficient way of minimizing the spread of Covid19; however, it also produced many challenges for college students. Some challenges experienced by college students with converted online classes were anxiety and frustration (Aristovnik et al., 2020), internet and connection issues (Tigaa and Sonawane, 2020), and lack of appropriate devices for online work (Day et al., 2021). Despite

the findings from these studies, further research is needed to uncover and understand other effects and challenges on college students from converting their face-to-face classes to online during the Covid-19 pandemic.

One important variable to investigate during the Covid-19 pandemic is student engagement. Student engagement is defined as making a psychological investment in learning and striving to learn (Newmann, 1992). Student engagement is important because it is a significant predictor of academic achievement and academic success (Lei, Cui, and Zhou, 2019; Marks, 2000). Student engagement has also been identified as a major challenge for universities as classes were moved online in response to Covid-19 (Farooq et al., 2020; Nickerson and Shea, 2020; Perets et al., 2020). Despite the importance of student engagement, only a few studies have examined the effects on student engagement from abruptly converting face-to-face classes to online because of the Covid-19 pandemic (Zhang, Wu, Cao, Goetz, and Parks-Stamm, 2020). Therefore this study seeks to address this gap in the literature and explore how the conversion of face-to-face classes to online in response to Covid-19 impacted student engagement. This study also seeks to explore how the different types of student engagement were impacted by the conversion to online and to explore which student groups were impacted the most by the conversion to online. This study also provides student recommendations on ways to improve engagement in online course offerings.

The paper begins by reviewing the literature on student engagement and Covid-19. Next, the paper discusses the research methodology and data collection. Third, the paper presents the findings from the study. Last, the paper discusses the conclusions of the study and provides recommendations on ways to improve student engagement in online classes.

Literature Review

Student Engagement

Student Engagement has been a challenge for universities and educators (Shenoy, Vijay, and Mahandher, 2020). Getting students engaged in a class is challenging in face-to-face classes and especially in online classes (Martin and Bolliger, 2018). Student engagement is very important to universities and colleges because of its strong and positive relationship with academic achievement (Lei, Cui, and Zhou, 2018) and because of its positive associations with college outcomes (Kuh, 2009). Student engagement is considered a key component in keeping students connected with their courses and with their learning (Robinson and Hullinger, 2008; Kehrwald, 2008). Universities, professors, and researchers have a strong interest in understanding student engagement and especially methods to improve and increase student engagement in college classes (Marks, 2000; Williams and Whiting, 2016).

Student engagement has been theorized as a continuous cycle with academic outcomes. Finn's (1989) participation-identification model of student engagement proposes that student engagement leads to successful academic performance which in turn leads to students' greater recognition of the importance of college. This recognition produces a positive effect where students are motivated to study, focus and participate more with their classes which then improves their level of academic achievement. The cycle then starts over again (Lei et al., 2018)

Researchers have defined student engagement as a multidimensional construct consisting of (1) skill engagement, (2) emotional engagement, (3) participation engagement, and (4)

performance engagement (Handelsman, Briggs, Sullivan, and Towler, 2005; Dixson, 2015). Skill engagement focuses on how engaged students are with practicing general learning skills in a class such as taking notes and completing homework problems. Emotional engagement pertains to how emotionally involved and connected students feel to a course such as applying course material to their life. Participation engagement is focused on participating in class and interacting with the professor and other students. Performance engagement is focused on students' engagement through levels of performance in the class such as doing well on tests and getting a good grade.

This multidimensional conceptualization of student engagement is focused at the "micro" level such as what happens during and immediately in a class instead of assessing engagement at the "macro-level". The National Survey of Student Engagement (NSSE) assesses engagement at the macro level. It assesses students' overall perceptions of engagement at universities instead of focusing on engagement in individual courses. This study focuses on student engagement at the micro (course) level to help professors, universities, and researchers better understand how student engagement in college courses was impacted when face-to-face courses were converted to online in response to Covid-19.

Covid-19 and Transition of Face-to-Face Classes to Online

Covid-19 and the shift to online classes at colleges and universities around the world have been labeled as the largest unplanned education experiment ever undertaken (Day et al., 2020). Students experienced an unprecedented and unwanted change from traditional face-to-face classes to online classes (LeBlanc, 2020). This change in course modality created significant challenges for students (Cao et al., 2020). Challenges reported include lack of appropriate devices for completing online work (Day et al., 2021), internet and connection issues (Tigaa and Sonawane, 2020), deficient computer skills (Aristovnik et al., 2020), and lack of familiarity with online classes (Day et al., 2020). Other challenges reported by students were inability to stream high-definition lectures and inability to use educational software (Tigaa and Sonawane, 2020). These challenges are likely to impact student engagement as students may not have had the technology, the resources, or the experience to engage in their online classes.

Research is limited and still forthcoming on the effects on students from converting face-to-face classes to online. Most research has shown detrimental effects on students from the conversion of face-to-face classes to online. A study by Harvard Business Publishing Education (2020) found that online learning in converted classes during Covid-19 was less effective and the quality of education declined as reported by students. A study by Garris and Fleck (2020) found that transitioned online classes were less enjoyable, less interesting, had less learning value, and facilitated less attention. Garris and Fleck (2020) also found that students put forth less effort in these converted to online classes. A study by Aristovnik et al. (2020) found that students experienced boredom, anxiety, and frustration when their classes were converted to online. Satisfaction with class has also been shown to decline when classes were transitioned to online due to the Covid-19 pandemic (Kaur, Dwivedi, Arora, and Gandhi, 2020). A study by Whiting et al. (2021) found that engagement with the university, engagement with college/department, engagement with the professor, engagement with other students, and enjoyment of class declined after classes were converted to online during the Covid-19 pandemic. Another study found that students struggled more to learn quantitative concepts when courses were moved online because of Covid-19 (Hadi, Andrian, and Hidayat, 2020). Overall, these studies suggest that converting

face-to-face classes to online during the Covid-19 pandemic had many negative effects on students. These studies suggest that student engagement may be negatively impacted by the conversion to online classes.

While most studies on Covid-19 and conversion of face-to-face classes to online have found negative results, a few studies have found positive results. Some of the positive effects of converting face-to-face to online include better attendance at online classes when compared to regular face-to-face class sessions (Shenoy, Mahendra, and Vijay, 2020) and increased study time (Aucejo, French, Araya, and Zafar, 2020). Students also reported that they had a better understanding of the material because classes were recorded and could be replayed (Kaur, Dwivedi, Aror, Gandhi, 2020). Another study found that students liked the flexibility of their converted online classes (Garris and Fleck, 2020). Students also reported that they were satisfied with the support provided by their professors in their transitioned to online classes (Day et al., 2021). Studies on faculty perspectives with converted to online classes found that engagement and participation were easier to measure and monitor because the learning management system recorded all activities (Harvard Business Education Publishing, 2020). These findings suggest some types of student engagement may be positively impacted by the conversion to online.

Due to the mixed and varying effects discussed previously, this study chose to investigate the impact of converting face-to-face classes to online on four different types of student engagement: (1) emotional engagement, (2) participation engagement, (3) performance engagement, and (4) skill engagement. Research on the pedagogical effects of converting face-to-face classes to online is limited (Cao et al., 2020; Demuyakor, 2020), therefore this study seeks to fill this gap in the literature and discover how student engagement was impacted when face-to-face classes were converted to online due to Covid-19. Overall, this study seeks to uncover how this unplanned and unwanted experiment in online learning impacted student engagement.

Research Questions

The following research questions guided the study:

1. *Student Engagement*:

    a. Did student engagement significantly change after converting classes to online?

2. *Types of Student Engagement*:

    a. Did any type(s) of engagement increase when classes were converted to online? Which type of student engagement increased the most and which type of student engagement increased the least?

    b. Did any type(s) of engagement decrease when classes were converted to online? Which type of student engagement decreased the most and which type of student engagement decreased the least?

3. *Relationship between Individual Student Characteristics and Change in Student Engagement*:

    a. Did gender, ethnicity, rank of student, personality type, preference for face-to-face classes, type of student, and type of class impact the change in student engagement?

      b. Did some groups of students have a larger change in engagement than other groups of students?

    4. *Student Feedback and Suggestions*:

      a. What things could the professor have done to make the converted to online class a better experience?

      b. How can professors increase engagement in online classes?

Methodology and Data Collection

Eight business courses at a southeastern state college were utilized for this study. These eight business courses had been converted from face-to-face to online in response to Covid-19. IRB approval was granted at the end of March 2020 and data was collected in mid-April 2020. Student participation was voluntary. Students were offered extra credit points for completing the online survey. Students were also given the option to complete an alternative extra credit assignment if they did not want to participate in the survey.

One hundred and sixty students completed the survey. Participants ranged in age from eighteen to seventy with forty percent of participants between the ages of 18-24. Fifty-one percent of respondents were female. Fifty-one percent of participants were African American, twenty-five percent were Caucasian, fifteen percent were Hispanic/Latino, and eight percent were other ethnic groups. Ninety-one percent of participants were enrolled as juniors and seniors.

At the beginning of the survey, respondents were asked to think about and list a class that had been face-to-face but was converted to online due to Covid-19 pandemic. Students were instructed to think only about the particular class they listed at beginning of the survey when answering the survey questions. The survey consisted of two parts: (1) before when the class met face-to-face and (2) after class was converted to online. Students were first asked a series of questions about their engagement with the class when it met face-to-face. Next, students were asked a series of questions about their engagement with the class when it was converted to online. The same set of questions were used when asking about engagement when class was face-to-face and when class was online. Respondents were also asked open-ended questions about what the professor could have done to make the class a better experience and about ways to increase engagement in online classes. At the end of the survey, respondents were asked demographic questions such as gender, age, ethnicity, personality, preference for face-to-face classes, rank, major, and experience with online classes.

Student engagement was measured using a 19 item Online Engagement Scale (OES) scale by Dixson (2015). The scale consisted of four types of engagement: (1) participation engagement, (2) emotional engagement, (3) skill engagement, and (4) performance engagement. Participation engagement consisted of questions such as I have fun in online chats and discussions, I engage in conversations online (chat, discussion, email), I regularly participate in online activities, etc. Emotional engagement consisted of questions such as I find ways to make the course information interesting to me, I apply course material from this class to my life, and I find ways to make the class material relevant to my life. Skill engagement consisted of questions such as I make sure to study regularly in this class, I look over my notes to make sure I understand the material, I try to stay up to date on the readings in this class. Performance engagement consisted of questions such

as I do well on tests/quizzes in this class and I will get a good grade in this class. Respondents responded on a 7 point Likert scale with 1 representing strongly disagree and 7 representing strongly agree.

Findings and Results

The Statistical Package for the Social Sciences (SPSS) was used to assess the research questions. Table 1 and Table 2 provide the results of the statistical analyses. Table 1 provides the means of the variables in this study. These means include the face-to-face engagement scores (before conversion), the online student engagement scores (after conversion to online), and the change in each variable. Table 1 also provides the results of the paired sample t-tests. Table 2 provides the results from the analysis of variance (ANOVA) analyses.

Student Engagement

The data analysis first began by calculating the change between student engagement scores when the class was face-to-face (before conversion) and when the class was converted to online (after conversion to online). Engagement scores when the class was online were subtracted from engagement scores when the class was face-to-face (see Table 1). A change score was calculated for each of the four types of student engagement. As shown in Table 1, the calculated change for each of the four types of student engagement are as follows: (1) -1.30 for participation engagement, (2) -0.86 for emotional engagement, (3) -0.81 for skill engagement, and (4) -0.75 for performance engagement. These findings demonstrate that all four types of student engagement declined when classes were converted from face-to-face to online. Participation engagement had the largest decline followed by emotional engagement. Performance engagement had the smallest decline. There were no types of student engagement that increased after class was converted to online

Table 1: Means and Change in Engagement

Variable	Face-to-Face	Online	Change
Participation Engagement*	5.51	4.23	-1.30
Emotional Engagement*	5.80	4.94	-0.86
Skill Engagement*	5.98	5.16	-0.81
Performance Engagement*	5.89	5.12	-0.75

*$p \leq .01$

The next type of analysis consisted of conducting paired sample t-tests to evaluate if the face-to-face student engagement scores were significantly different from the online student engagement scores. As seen in Table 1, the face-to-face and online student engagement scores were significantly different at the .00 level for participation engagement, emotional engagement, skill engagement, and performance engagement. These results demonstrate that face-to-face student engagement scores and online student engagement scores for all four types of student engagement were significantly different, and that all four types of student engagement significantly declined after the conversion to online.

Individual Student Characteristics

To investigate individual student characteristics and their impact on student engagement, ANOVA analyses were conducted. The calculated change or decline in each of the four types of student engagement were used as the dependent variables and the student characteristics were used as the independent variables (See Table 2). Using calculated change variables as dependent variables have been previously used in other marketing studies such as Martin, Borah, and Palmatier (2017) and Whiting and Donthu (2009). ANOVA analyses were run separately for each dependent variable with the independent variables. ANOVA analyses were chosen because some categories had more than two groups.

Type of Student. The first individual characteristic investigated was the type of student. Students were grouped into two groups: traditional students (age 18-24) and non-traditional students (25 and older). The first type of student engagement assessed was participation engagement. An ANOVA analysis was conducted with participation engagement as the dependent variable and type of student as the independent variable. The mean decline in participation engagement was -1.15 for traditional students and -1.75 for non-traditional students. These means were significantly different at the .05 level. These results indicate that non-traditional students had a larger decline in participation engagement than traditional students. The second type of student engagement assessed was emotional engagement. The mean decline in emotional engagement was -0.80 for traditional students and -1.11 for non-traditional students. These means were not significantly different at the .05 level. Thus, there were no significant differences among traditional and non-traditional students and their decline in emotional engagement. The third type of engagement assessed was skill engagement. The mean decline in skill engagement was -0.68 for traditional students and -1.22 for non-traditional students. These means were significantly different at the .03 level and demonstrate that skill engagement significantly declined more for non-traditional students than for traditional students. The last type of engagement assessed was performance engagement. The mean decline in performance engagement was -0.75 for traditional students and -0.82 for non-traditional students. These means were not significantly different at the .05 level and thus indicate that there were no significant differences among traditional and non-traditional students and their decline in performance engagement. Overall, these results demonstrate that non-traditional students had significantly greater declines in participation engagement and skill engagement than traditional students. There were no differences among traditional and non-traditional students for emotional engagement and performance engagement.

Preference for Face-to-Face Classes. The second individual characteristic investigated was preference for face-to-face classes. Students were grouped into two groups based on their responses to class preference questions. The two groups were (1) those who prefer face-to-face

classes and (2) those who prefer online classes. ANOVA analyses were conducted on each of the four types of engagement. The first ANOVA conducted was on participation engagement. The mean decline in participation engagement was -1.70 for those who prefer face-to-face and -0.55 for those who prefer online. These means were significantly different at the .00 level. The results demonstrate that those who prefer face-to-face had a significantly larger decline in participation engagement than those who prefer online classes. Next, emotional engagement was assessed. The mean decline in emotional engagement was -1.21 for those who prefer face-to-face and -0.21 for those who prefer online. These means were significantly different at the .00 level. Thus, those who prefer face-to-face classes had a significantly larger decline in emotional engagement than those who prefer online classes. Third, skill engagement was assessed. The mean decline for skill engagement was -1.12 for those who prefer face-to-face and -0.22 for those who prefer online. These means were significantly different at the .00 level. Thus, those who prefer face-to-face classes had a significantly larger decline in skill engagement than those who prefer online classes. Last, performance engagement was assessed. The mean decline in performance engagement was -1.08 for those who prefer face-to-face and -0.14 for those who prefer online. These means were significantly different at the .00 level. The results demonstrate that those who prefer face-to-face classes had a significantly larger decline in performance engagement than those who prefer online classes. Overall, the results demonstrate that those who prefer face-to-face classes had significantly larger declines in all four types of student engagement and thus were impacted more than those who prefer online classes.

Personality Type. Personality type was measured by a modified 3 item scale from Hurley (1998). Using the scale, respondents were then coded into two groups: (1) introverts and (2) extroverts. ANOVA analyses were conducted on each of the four types of engagement. An ANOVA was first conducted on participation engagement and personality type. The mean decline or change in participation engagement was -1.03 for introverts and -1.63 for extroverts. These means were significantly different at the .00 level indicating that participation engagement significantly declined more for extroverts than introverts. Next, emotional engagement was analyzed. The mean decline in emotional engagement was -0.69 for introverts and -1.08 for extroverts. These means were significantly at the .05 level indicating that emotional engagement declined more for extroverts than introverts. Third, skill engagement was assessed. The mean decline in skill engagement was -0.73 for introverts and -0.91 for extroverts. These means were not significantly different. The last ANOVA analysis conducted was on performance engagement. The mean decline in performance engagement was -0.49 for introverts and -1.07 for extroverts. These means were significantly different at the .01 level. This finding demonstrates that extroverts had significantly larger reductions in performance engagement than introverts. Overall, these results demonstrate that extroverts had significantly larger reductions in participation engagement, emotional engagement, and performance engagement than introverts. There were no differences among introverts and extroverts and the decline in skill engagement.

Other Individual Variables. ANOVA analyses were also conducted on other individual student characteristics such as gender, ethnicity, rank of student, type of class, and experience with online classes. None of those variables produced significant results on any of the four types of student engagement.

Table 2: ANOVA Tests

Factor	Dependent Variable	F value	df	Sig.
Type of Student	Δ Participation Engagement	3.53	141	**.05**
	Δ Emotional Engagement	2.29	143	.13
	Δ Skill Engagement	4.75	142	**.03**
	Δ Performance Engagement	0.21	142	.65
Preference for Face-to-Face	Δ Participation Engagement	16.95	141	**.00**
	Δ Emotional Engagement	20.38	144	**.00**
	Δ Skill Engagement	16.61	143	**.00**
	Δ Performance Engagement	13.81	143	**.00**
Personality Type	Δ Participation Engagement	7.81	141	**.00**
	Δ Emotional Engagement	3.99	144	**.05**
	Δ Skill Engagement	2.31	143	.13
	Δ Performance Engagement	6.27	143	**.01**

Conclusions

This study was conducted to address a gap in the literature and explore how Covid-19 and the conversion of face-to-face classes to online classes impacted student engagement. In particular, this study sought to understand how (1) participation engagement, (2) emotional engagement, (3) skill engagement, and (4) performance engagement were impacted by the conversion to online classes. The study also sought to explore if student characteristics impacted study engagement. The major findings of the study are:

- All four types of student engagement significantly declined after face-to-face classes were converted to online in response to Covid-19.

- Participation engagement had the largest decline followed by emotional engagement. Performance engagement declined the least.

- Non-traditional students had significantly larger declines in participation engagement and skill engagement than traditional students. There were no significant differences among traditional and nontraditional students on performance engagement and emotional engagement.

- Those who prefer face-to-face classes had significantly larger reductions in all four types of student engagement (skill, emotional, participation, and performance) than those who prefer online classes.

- Extroverts had significantly larger declines in participation engagement, emotional engagement, and performance engagement. There were no differences between extroverts and introverts on skill engagement.

- Gender, ethnicity, rank of student, type of class, and experience with online did not have a significant impact on the decline in skill engagement, decline in emotional engagement, decline in participation engagement, or the decline in performance engagement.

Recommendations

A major goal of this study was to provide student feedback and recommendations about what could have been done to make the converted class a better experience and what professors can do to increase student engagement with online classes. The research instrument for this study included three open-ended questions asking students about (1) what could the professor do to make the class better for you and other students (2) what suggestions do you have for making this online class better for you and other students, and (3) what suggestions do you have for helping professors get students more engaged in online classes. Using the student comments along with the quantitative findings previously outlined, the following suggestions are provided.

1. *Consider providing more online interactions with the professor and with classmates.* The number one recommendation from students was to offer more opportunities to interact with the professor and with classmates. Recommendations from students on ways to interact with professor and classmates included (1) one-on-one meetings with professors such as "live" office hours, (2) "live" question and answer (Q &A) sessions with professor and classmates, (3) weekly discussion boards instead of individual assignments so they could connect with classmates, and (4) team meetings with the professor to discuss group projects. Students also recommended having a breakout room on Zoom or Microsoft Teams so students could connect more with other students and discuss a particular topic or project. Overall, students wanted more interaction with their professors and with their classmates. This recommendation relates to participation engagement as students wanted avenues to engage and participate in the class. As this study showed, participation engagement declined the most after the conversion to online. Professors should consider creating opportunities to interact with their online students and consider adding opportunities for students to interact with their classmates.

2. *Consider assisting with skill engagement*. Many of the students recommended providing more assistance and guidance with learning the material and preparing for quizzes and exams. Students mentioned that they would like more information on how to "best" study and "best" prepare for online exams. Other students mentioned wanting study guides, detailed lesson plans, and suggestions on how to approach class material to improve test scores. Some students requested short quizzes between tests and more assignments to help them learn the material while other students recommended having review session videos or "live" review sessions. Many students suggested having tutoring and Q &A sessions with the professor or teaching assistant on difficult concepts and challenging homework problems. Overall, students wanted guidance and assistance with improving their study skills and they wanted more opportunities to practice their knowledge of course material.

3. *Consider providing recorded lectures and consider providing opportunities for live sessions*.
Many students recommended having recorded lectures of professors discussing course material and working out problems. Some students felt that recorded lectures were a more efficient use of their time than live class sessions. Other students wanted the option to have a live class session

and a live Q & A session. Some students recommended having virtual class meetings on an assigned day and time. Other students wanted live sessions for Q & A only. These suggestions relate to both participation and skill engagement. Students want the necessary information and skills to be successful in the class and they want to participate and interact with their professor and classmates.

4. *Consider focusing on and increasing emotional engagement in an online course.*
Emotional engagement was the second-largest type of student engagement that declined when the class was converted from face-to-face to online.   A report from Harvard Business Education Publishing (2020) found that students expressed interest in learning about topics that relate to current world events and especially the impact of Covid-19. Faculty should consider how they can incorporate current content such as world events that will help students want to think about the course material in between class meetings. Professors should consider helping students emotionally connect to the material in the class and help students find ways to apply course content to their lives. Providing these things especially in online classes will help students get more emotionally involved and engaged with the course.

5. *Consider providing more structure and details in online classes.* Many students mentioned that were they were afraid of forgetting what was due or getting confused with assignments in other classes. Students suggested that professors provide detailed lesson plans, a weekly checklist of what needs to be done, a structured syllabus with lists of weekly required activities and assignments, and weekly reminder emails about what is due. Students also asked for detailed instructions on assignments and they asked for the ability to work ahead on assignments. Students expressed that they wanted professors to help them with keeping up with assignments such as having due dates posted on the calendar in the learning module system. Students also asked for professors to make it easy for them to locate and find things online such as folders for certain topics and a folder for all assignments. Other students recommended having a weekly module format where everything for that week is located in that week's module.

6. *Focus on communication and communicate often.* Students provided many recommendations centered on communication such as send weekly emails, post announcements on the learning management system, send out notifications, and send out reminders about assignments about exams. Other students suggested that professors send weekly updates or "wrap up" emails at the end of the week. Some students asked for more communication and to "over" communicate with students. Students also recommended that professors respond to student emails promptly. One student recommended that professors "just answer their email". Students also suggested that professors reach out to students more via email and let students "hear from their professors more frequently". Overall students suggested that professors communicate more frequently with students and respond to emails. Professors can show students that they are engaged and participating in the class by communicating more to students.

7. *Consider having more flexibility and/or options with online course requirements.* Many students discussed how they were struggling with the pressure of the pandemic and the pressure of having all their classes online. Many students asked for flexibility with class requirements and the ability to turn in late assignments. Students said they wanted professors to understand that they have had "all their classes shifted to online". Professors teaching online classes and

classes during pandemics and natural disasters may be able to help students by providing flexibility with class requirements and assignments. For example, professors can give students the flexibility to complete eight out of 10 chapter quizzes. This gives students the flexibility to miss two quizzes or take the eight highest quiz grades. Another example of flexibility would be giving students options to either complete weekly discussion board assignments or attend weekly Q & A sessions. Introverts may prefer discussion boards while extroverts may prefer Q & A sessions. Giving online students flexibility could help them choose activities and tasks that will help them engage better with the class and with their professor. Shifting face-to-face classes to online has been a huge experiment for both students and professors. Professors may want to consider having more flexibility with students during the Covid-19 pandemic, during other natural disasters, and during other campus disturbances that may occur. Flexibility may be one way to help students engage better with online classes and ultimately perform better in online classes.

Contributions

This paper makes many contributions to the literature on student engagement and the Covid-19 pandemic. First, this paper provides results on how the conversion of face-to-face classes to online in response to Covid-19 impacted student engagement. Only a few students have published effects on student engagement from converting to online due to Covid-19 (Harvard Business Education Publishing, 2020; Tigaa and Sonawane, 2020; Whiting et al., 2021). Covid-19 is a new area of research and thus literature is lacking in this area. Second, this research extends the student engagement literature by investigating a new phenomenon of abruptly converting face-to-face classes to online and how this change impacted student engagement. Third, this study uncovers how individual student characteristics influence student engagement. Last, this paper provides suggestions and recommendations to professors to help increase student engagement in online classes.

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