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Transitioning from Face-to-Face to Remote Learning: Students' Attitudes and Perceptions of using Zoom during COVID-19 Pandemic

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Abstract

Due to the COVID-19 pandemic and during the middle of the spring 2020 semester, many universities were forced to move from face-to-face (FTF) in-classroom to remote instruction. Many institutions used Zoom as their delivery platform. The purpose of this study was to investigate students' attitudes towards the use of Zoom in remote learning, and their perceptions of its effects on their learning and engagement in comparison to FTF learning. Thirty-one university students participated in this study. Data were collected using a 5-point Likert-type survey. The results indicated that students had a negative attitude toward the use of Zoom and perceived it as having a negative effect on their learning experience and their motivation to learn. Students listed flexibility as a main advantage to using Zoom for learning.

Introduction

The COVID-19 pandemic forced universities and schools to move entirely from FTF to remote instruction, this move created an unprecedented instructional environment for both instructors and students. Instructors faced many challenges including learning to use new technologies in a short period, designing instructional materials that fit the new environment, providing interactive remote learning environment, and adopting new assessment techniques. Many universities and schools provided professional training sessions to their faculty members to smooth the transition from FTF to remote instruction. Many provided internet access and laptops to their students in an effort to facilitate this quick transition. The move was not easy for students, instructors, or administration.

During the Covid-19 pandemic, Zoom was the choice for many government agencies, universities, non-profit organizations, and individuals. Zoom, was founded by Eric Yuan in 2011. It is a web-based collaborative video conferencing tool that provides quality audio, video, and screen sharing, which makes it great for virtual conferences, online lectures, online meeting, webinars, and more. In many universities, it became readily available for students, staff, and faculty. Instructors were able to use the different features of Zoom to create interactive learning environments. These features include a virtual white board with annotation capacity to explain concepts, breakout rooms to create small collaborative group work, polls for student feedback, chat to facilitate class discussions. In addition, zoom meetings can be recorded and made available for future reference. (ASU website: <https://ets.engineering.asu.edu/zoom/>)

The use of distance learning techniques such as videoconferencing is not new. Instructors in higher education have been using them for many years to communicate with in real time. Many studies focused on the use of video-conferencing tools (E.g., Anastasiades et al., 2010; Candarli & Yuksel, 2012; Delaney et al., 2004; Ghazal et al., 2015; Karal et al., 2011; Knipe & Lee, 2002; Mader & Ming, 2015; Oh & Lee, 2012). Some studies focused specifically on the use of Zoom in the classroom (E.g., Archibald et al., 2019; Maul et al., 2018; Sayem et al., 2017; Wang et al., 2018). Over the past few months in particular, researchers have started investigating online learning during the COVID-19 Pandemic (Adnan & Anwar, 2020; Agarwal & Kaushik, 2020; Basilaia et al., 2020; Bao, 2020; Demuyakor, 2020; Murphy, 2020; Naciri et al., 2020; Toquero, 2020).

Knipe and Lee (2002) examined the concern that teaching and learning using video conferencing is not of the same quality of the one experienced in a traditional classroom environment. The results indicated that the teaching and learning that the students in the remote site experienced was of less quality than students in the traditional classroom. Candarli and Yuksel (2012) conducted a study to explore students' perceptions of videoconferencing in higher education. The participants of the study were second and third-year university students

who attended a videoconferencing English class for about thirty minutes. The results of the study indicated that students had a negative attitude towards the use of videoconferencing in the class.

Wang et al. (2018) conducted a study that investigated a blended synchronous learning environment (BSLE). The majority of students attended the course FTF while the rest joined the course using two-way videoconferencing (Zoom). The purpose of the study was to investigate the students' learning experiences and their perceptions of the blended synchronous learning approach. Twenty-four students enrolled in an elective course at a teacher education institution participated in the study. Results of the study indicated that students liked the flexibility and convenience of attending lessons via Zoom at remote sites. However, the researchers observed that students' participation through Zoom was low. Students occasionally shut down their webcams and did not answer when they were called upon. In addition, the researchers did not observe any critical technical difficulties and the student did not report any major technical difficulties using Zoom and it seemed that all online students could easily join the Zoom sessions. In their conclusion, the researchers identified the following factors for creating a successful BSLE experience: effective communication between the online students and the instructor, and between the online students and classroom students, the engagement of online students, the redesign of instructional activities; and the quality of audio.

Sayem et al. (2017) studied the effectiveness of using Zoom on improving the success of students studying foundation engineering units. Student engagement with the course was measured by observing the number and types of posts to the Q&A Forum on the Moodle site and the number of students attending Zoom virtual tutorials. The researchers found that the use of Zoom virtual tutorials resulted in increased students' satisfaction and reduced instructor workload of approximately 25%.

Archibald et al. (2019) conducted a study to explore the suitability of using Zoom for qualitative data collection within a health research context. Data were collected using online qualitative interviews with 16 female nurses. The duration of the interviews was 50 - 92 minutes. The researchers found that 69% of the participants preferred using Zoom as an interviewing technique in comparison FTF, phone or other videoconferencing platforms. In addition, the participants reported the following advantages of using Zoom for qualitative interviewing: rapport, convenience, simplicity and user-friendliness. The researchers found that using Zoom might serve as a highly suitable platform for collecting qualitative interview data. They identified the following reasons for that: relative ease of use, cost-effectiveness, data management features, and security options.

Maul et al. (2018) investigated the perceived value of the use of Zoom for dissertation chairs to coach and mentor doctoral students. The participants of this study were dissertation chairs and students in the College of Doctoral Studies at a university in the southwestern United States. A researcher-developed survey was created to collect demographic data on the dissertation chairs in the university as well as data on their use of Zoom with their doctoral students. Data were collected using a 19-item Likert style survey. The survey consisted of five sections; demographic information, monthly usage of Zoom and how dissertation chairs used Zoom with their doctoral students. In addition, the researchers interviewed four dissertation chairs and four doctoral students. The researchers found that both the faculty and the students valued the use of Zoom. They indicated that Zoom enabled students to build a valuable relationship with their advisors and increased their productivity level.

Due to COVID 19 pandemic, Agarwal and Kaushik (2020) FTF classes were replaced with 40-minute Zoom lectures. Seventy-seven students recorded their perceptions at the end of the lecture series. The majority of the students (97%) indicated that the sessions were relevant to their learning needs and clinical practice and 99% found that the sessions were adequate to their level of learning. All the participants suggested that Zoom lectures should be made part of the medical curriculum. Based on these results, the researchers concluded that online teaching should be part of the postgraduate training in future classes.

Demuyakor (2020) investigated Ghanaian international students' levels of satisfaction of online learning in higher educational institutions in China. The results of the study indicated that students supported the implementation of online learning programs. They were satisfied with their online learning experience during the transition from FTF to online and perceived the online courses as effective. On the other hand, students who participated in the courses while outside China indicated that they spent a lot of money to secure internet data for online learning. In addition, students who lived in dorms indicated that the internet connectivity was very slow.

Due to the COVID-19 pandemic, many universities moved from FTF classroom instruction to remote instruction, some used Zoom as their delivery platform. The purpose of this study was to investigate students' attitudes towards the use of Zoom, in addition to exploring their perceptions of their learning and engagement

using Zoom in comparison to the traditional FTF sessions. The aim of this study was to answer the following five questions:

1. What are students' attitudes toward the use of Zoom for learning?
2. How do students perceive the effect of using Zoom on their learning?
3. What are the students' perceptions of their classroom engagement while using Zoom?
4. Do students prefer the Zoom classroom or the traditional face-to-face classroom?
5. What are the students' perceived advantages and disadvantages of using Zoom?

Method

The participants in this study were 31 students at a major university in the USA. The students attended FTF classes during the spring 2020 semester until the middle of March, when they found themselves switching to a new remote learning environment using Zoom. The participants filled a 5-point Likert-type 19-item survey that the researcher developed based on literature review and the aim of the study. The scale of the survey responses ranged from Strongly Disagree (1) to Strongly Agree (5). The survey consisted of four sections: students' attitudes toward the use of Zoom, students' perceptions of the impact of using Zoom on their learning, students' perceptions of their classroom engagement while using Zoom, and students' perceptions of the differences between face-to-face and Zoom sessions. In addition, the survey included two open ended questions: What are the advantages of using Zoom? What are the disadvantages of using Zoom?

Results and Discussion

The responses collected from the 5-point Likert-type survey items were grouped into four categories: students' attitudes toward the use of Zoom, students' perceptions of the impact of using Zoom on their learning, students' perceptions of their classroom engagement while using Zoom, and students' comparison between face-to-face and Zoom sessions. In addition, students' responses to the questions about the advantages and disadvantages of using Zoom were tabulated. In the following discussion, the designation of "agree" includes all "agree" and "strongly agree" responses while the "disagree" designation includes all "disagree" or "strongly disagree" survey responses. To provide an answer to the first research question about students' attitudes toward the use of Zoom, 22.58% agreed that they enjoyed using it while 48.39% disagreed. In addition, only 19.36% indicated that they would like to use Zoom in other classes, while 55.01% disagreed. The means of students' responses for the five survey items ranged from 2.29 to 3.10 out of 5 which indicated a less favorable level of support for the use of Zoom (see Table 1).

Table 1. Participants' Attitudes toward the Use of Zoom

Item	Mean	SD
1. I enjoyed using ZOOM during the class.	2.52	1.16
2. I felt comfortable using ZOOM in the class.	3.00	1.16
3. I would like to use ZOOM in other classes.	2.29	1.22
4. The use of ZOOM allowed flexibility in my learning schedule.	3.10	1.20
5. Overall, I enjoyed using ZOOM in the class.	2.55	1.16

Similarly, in their study, Candarli and Yuksel (2012) found that students tend to have a negative attitude towards using video-conferencing. However, the results contradict the findings reported by Wang et al. (2018). Students in their study had positive attitudes toward the use of Zoom in their courses. They perceived it as a valuable tool for facilitating teaching in spite of some technical issues as expressed by this student's response; "even though there were some initial uncertainties and technical glitches, I appreciate the positive spirit that [the instructor] has shown throughout the module" (p. 10).

Regarding students' perceptions of the effects of using Zoom on their learning during classroom activities, only 9.68% agreed that the use of Zoom improved their learning, while 61.29% disagreed. Similarly, 9.68% agreed that the use of Zoom helped develop their confidence in the subject while 70.97% disagreed. The means for students' responses ranged from 2.13 to 2.35 out of 5, which indicated that students believed that the use of Zoom had a negative impact on their learning (see Table 2).

Table 2. Students' Perceptions of the Impact of Zoom on their Learning

Item	Mean	SD
6. The use of ZOOM improved my learning in the class.	2.16	1.17
7. The use of ZOOM helped me learn the class content.	2.35	1.18
8. The use of ZOOM helped me develop confidence in the subject.	2.13	1.10

Regarding the third research question on students' perceptions of their classroom engagement while using Zoom, 12.91% agreed that the use of Zoom helped them participate in the class, while 61.29% disagreed. Regarding classroom interaction with the instructor while using Zoom, 19.36% agreed that their interaction increased, while 61.29% disagreed. The means of students' responses ranged from 1.97 to 2.71 out of 5, which indicated that students believed that the use of Zoom had mostly a negative impact on their classroom engagement and did not increase their interaction on any level (see Table 3). The results of this study agree with the results of Wang et al.'s (2018) study. They found that student participation through Zoom was low; students occasionally shut down their webcams and did not answer when they were called upon. Students' interactions and experiences during the Zoom sessions were lower than the students' interactions in traditional classroom settings.

Table 3. Students' Perceptions of their Classroom Engagement

Item	Mean	SD
9. The use of ZOOM helped me participate in the class in ways that enhanced my learning.	2.23	1.10
10. The use of ZOOM motivated me to actively participate in class activities.	2.16	1.35
11. The use of ZOOM made it easier for me to be more engaged in the class discussions.	2.32	1.35
12. The use of ZOOM increased my interaction with my instructor.	2.29	1.32
13. The use of ZOOM increased my interaction with my classmates	1.97	1.12
14. The use of ZOOM motivated me to seek help from tutors, classmates, and the instructor.	2.71	1.44

In regards to the fourth research question on students' comparisons between FTF and Zoom sessions, the means of students' responses ranged from 1.94 to 3.81 out of 5, which indicated that students favored the traditional FTF classroom instruction in comparison to the Zoom sessions (see Table 4). This agrees with the conclusion in Roy et al.'s (2020) study where students preferred to go back to the face-to-face instruction post the COVID 19 lockdown. Doggett (2007) reported similar findings; the majority of the students (80%) indicated that they would have been more comfortable in a traditional classroom setting.

Table 4. Students' Comparison between FTF and Zoom Sessions

Item	Mean	SD
15. The activities during ZOOM sessions motivated me to learn the class content more than the ones in the face-to-face traditional class meetings.	2.10	1.20
16. I participated more in the ZOOM sessions in comparison to the traditional face-to-face class meetings.	2.10	1.25
17. My attention to the class tasks during the ZOOM sessions was greater in comparison to the traditional face-to-face class meetings.	1.94	1.19
18. It was easier to participate in group activities in the ZOOM sessions in comparison to the traditional face-to-face class meetings.	2.03	1.22
19. I believe that I would do better in the class if it was taught in the traditional face-to-face class format without using ZOOM.	3.81	1.38

Regarding the fifth research question about advantages and disadvantages of using Zoom as perceived by the students, students' responses (19 out of 31) were tabulated based on similarities. The percentages of students' responses were calculated as seen in Tables 5 and 6.

Table 5. Students' Perceptions of Advantages

Advantages	Percentage
<u>Flexibility:</u>	
<ul style="list-style-type: none"> • Works best with my schedule during the pandemic. • You get to do it in the comfort of your home. • Makes it easier to attend class and helps with most everyone's schedule. • I don't have to show my face every second. • I am able to come to class and participate without the need of going a physical location. • Flexibility of doing it from wherever 	78.95%
<u>Easier Interaction:</u>	
<ul style="list-style-type: none"> • Smaller classes allowed for more interaction. I felt it was easier to ask questions, and many professors ended up having ZOOM office hours which was nice because I could log in online instead of going to their actual office. • You can ask questions real time when they come up 	10.53%
<u>Written Communication:</u>	
<ul style="list-style-type: none"> • the use of the group/individual chat to communicate questions without publicly speaking them. 	5.26%
<u>Use of Multimedia:</u>	
<ul style="list-style-type: none"> • The platform highly encourages the use of multimedia to distribute notes and digital resources. This is a huge step in right direction for conservation of paper materials. 	5.26%

The advantages of using Zoom according to students were flexibility (78.95%), easier interaction (10.53%), written communication (5.26%), and the use of multimedia (5.26%). These findings agree with the findings in Wang et al.'s study (2018). Students in their study liked the flexibility and convenience of attending lessons via Zoom at remote sites. Students found Zoom sessions to be more flexible in comparison to face-to-face classrooms; it allowed them the flexibility of attending lessons anywhere.

Table 6. Students' Perceptions of Disadvantages

Disadvantages	Percentage
<u>Distractions:</u>	
<ul style="list-style-type: none"> • There are more distractions around in one's home. • very difficult to stay focused • My attention to anything goes way down because I get distracted by my family, phone, anything outside of a classroom environment. • I am outside the class environment which can lead to more distractions • more distractions in your own home easy to game the system 	42.11%
<u>Quality of Interaction & Feedback:</u>	
<ul style="list-style-type: none"> • The interaction is not the same and the instructor feedback is not the same as in person. • Not being able to continue face to face tutor sessions and speaking with your teacher in person. • Unable to communicate with the instructor face to face, some things are different live in person rather than online. Just take a sports game, it's different when your there live and when you're watching it on TV at home. • It was super difficult to learn and interact with anyone during the use of zoom • I am not physically with others students that I am able to quickly rely on for a quick check on work. • There is a lack of connection between myself, my peers, and my professor. • Communication was slowed down between student-teacher and student-student 	36.84%
<u>Poor Education Quality:</u>	
<ul style="list-style-type: none"> • The poorer quality of education that I feel like I'm getting. • I'm not learning anything and am paying a ridiculous amount for tuition • I lost motivation to study, I didn't understand the content as well as I could in person with a professor. 	15.79%
<u>Technical Difficulties:</u>	
<ul style="list-style-type: none"> • If my computer crashes I drop the ZOOM call until my PC reboots. ZOOM relies on so many pieces of modern tech working seamlessly together, the reliability of an in person class schedule is so much simpler. Come to the right place, at the right time, and be educated: or don't. Much simpler. As this more closely relates to real world professional expectations, I think ZOOM will never be able to replace face to face classes. 	5.26%

On the other hand, the major disadvantages of using Zoom according to students were: Distractions (42.11%) quality of interaction and feedback (36.84%), poor education quality (15.79%) and technical difficulties (5.26%). These findings indicate that students did not perceive technical difficulties as a major disadvantage. This finding is similar to what Wang et al. (2018) found in their study. The researchers did not observe any critical technical difficulties and students in their study did not report any major technical difficulties while using Zoom.

Conclusion

During the spring 2020 semester, Covid-19 pandemic affected the teaching and learning in many universities all over the world. To address this crisis, many universities turned towards remote learning. Some replaced their FTF classes with Zoom. The move was not easy neither for instructors nor for students who were not prepared for this shift. Many universities provided technological support for their faculty members and students, some provided internet access and loaned students laptops. The purpose of this study was to investigate students' attitudes and perceptions of their learning and engagement using Zoom vs. FTF sessions. The findings of this study indicated that students were not fully satisfied with their learning experience during this transition period. Many factors may have contributed to the results of this study. Instructors were not ready for this sudden change that required the use of a new platform and the design of alternate activities and delivery methods. Some users faced technical and unforeseen difficulties while using the new platform including internet access issues and Zoom bombings. Add to all of the above, equity and access issue.

Many universities are trying to be more prepared for the fall 2020 semester by offering their staff and faculty members training workshops on the use of different technologies, teaching methodologies and assessment techniques. Toquero (2020) called on institutions to adjust their pedagogical practices to adapt to the learning needs of the students beyond the classroom walls. To achieve a high quality online learning, Bao (2020) identified the following five high-impact teaching practice principles for online education: (a) appropriate relevance between online instructional design and student learning, (b) effective delivery of online instructional information, (c) adequate support by faculty and teaching assistants to students including timely feedback, tutoring and email guidance after class; (d) high-quality participation to improve the breadth and depth of student learning, and (e) contingency plan to deal with unexpected incidents of online education platforms. I will conclude by reaffirming the call by Toquero (2020) and encourage researchers to document the effects of the present pandemic on educational systems worldwide, more studies should be conducted in the coming semester.

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Appendix. Survey Items

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I enjoyed using ZOOM during the class.					
I felt comfortable using ZOOM in the class.					
I would like to use ZOOM in other classes.					
The use of ZOOM allowed flexibility in my learning schedule.					
Overall, I enjoyed using ZOOM in the class.					
The use of ZOOM improved my learning in the class.					
The use of ZOOM helped me learn the class content.					
The use of ZOOM helped me develop confidence in the subject.					
The use of ZOOM helped me participate in the class in ways that enhanced my learning					
The use of ZOOM motivated me to actively participate in class activities.					
The use of ZOOM made it easier for me to be more engaged in the class discussions.					
The use of ZOOM increased my interaction with my instructor.					
The use of ZOOM increased my interaction with my classmates					
The use of ZOOM motivated me to seek help from tutors, classmates, and the instructor.					
The activities during the ZOOM sessions motivated me to learn the class content more than the ones in the traditional face-to-face class meetings.					
I participated more in the ZOOM sessions in comparison to the traditional face-to-face class meetings.					
My attention to the class tasks during the ZOOM sessions was greater in comparison to the traditional face-to-face class meetings.					
It was easier to participate in group activities in the ZOOM sessions in comparison to the traditional face-to-face class meetings.					
I believe that I would do better in the class if it was taught in the traditional face-to-face class format without using ZOOM.					

- What are the advantages of using ZOOM?

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- What are the disadvantages of using ZOOM?

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