The Impact of COVID-19 on The Development of Online Education in Higher Education

Qihang Wang[1,2,*]

[1] Department of Computer Science, Rutgers University, New Brunswick, United State

[2] School of Art and Science, Rutgers University, New Brunswick, United State

* Corresponding Author Email: qw137@scarletmail.rutgers.edu

Abstract. Online education is an important research topic in the education field during the covid-19 pandemic era and post-pandemic era. Many researchers have researched online education through how teachers choose their platform, teachers' perspectives of the experience of online education, and students' perspectives of their experience with online education. However, how online education develops in colleges and universities using in covid-19 has not been studied much. Therefore, the topic of this article is to research how online education develops in colleges and universities during using covid-19. This article chooses data and literal from other papers and analyzes it to support it. This article shows that online education could become a regular choice for more schools in higher education.

Keywords: Online education; Covid-19; Teachers.

1. Introduction

Nowadays, through the development of technology, technology has impacted many aspects of our society, like communication, the economy, education, and many other areas. Covid-19 was a public health emergency for people worldwide, and this emergency made considerable changes in many areas during the crisis, including education. Therefore, this is the time for technology to exert its power to help people in this critical period. Many scholars have started to study how covid-19 might affect fields like education. Many aspects of education have been learned to tell people how covid-19 affects our lives. For example, there is research about teachers' self-efficacy during covid-19 in the United States [1], What is the future of online education in higher education during the post-covid-19 pandemic [2], and students' perspectives on education during covid-19[3] and many other topics that have been studied about education during covid-19. However, the main objective of this article is different from topics that have been studied a lot. The main objective of this article is to explore how online education develops in colleges and universities during using covid-19. Which is how online education has changed from an option that teachers and schools use because of the public health emergency to teachers and schools thinking that online education can be an option for regular classes if the course fits the online education pattern. And how students fulfill the new requirement creates by online education to achieve academic success.

2. Online Teaching and Learning Application Status from the Teacher Perspective

2.1 Challenges Teachers Encountered During Online Teaching and Change of Teaching Method During Online Teaching in Covid-19

From teachers' perspective, this covid-19 public health emergency would be a considerable challenge for teachers. The reason is that suddenly all students and teachers return to their homes and can't go out for an uncertain time, which means most teachers need to adopt a new teaching method within no time because the course needs to continue but in a completely unfamiliar environment. In this environment, teachers may only see virtual avatars of students instead of real people and can't interact with students because of unfamiliarity with software. So according to a survey conducted by

the author of the article "Assessing Lecturer's Readiness for Online Learning Implementation during Covid-19 Outbreak" [4] in University Utara Malaysia. All aspects of this survey, like course design for online teaching, course communication online, time management, and infrastructure. In infrastructure, "I am confident to use Webex for synchronous meeting" has the lowest mean number, which shows that the unfamiliarity of the teaching environment and the change of teaching method from the traditional classroom to online teaching in a short time is indeed a big challenge for teachers to overcome. Teachers need to find a new way of teaching, like randomly asking students to answer some questions or putting more activities that fit with online classrooms to interact more with students, which can create a learning environment like in a real classroom to both make students and teacher comfortable with. In conclusion, teachers during the covid-19 pandemic have many problems to overcome. A critical issue is switching teaching methods from traditional to new online.

2.2 Teacher's Teaching Efficiency Decreased During the Beginning of Online Teaching in Covid-19

As teaching methods change, other problems will arise—for example, the teaching efficiency of most teachers in online teaching. The previous section writes about how teachers face the challenges of unfamiliar teaching environments. This challenge may cause the problem that most teachers may not be as effective at teaching as they are in the classroom. According to the article which named "Teaching during a Pandemic: United States Teachers' Self-Efficacy During COVID-19", one extensive study found that the teaching environment played a critical role in maintaining teachers' sense of success [1, 5] And gaining professional support and be able to communicate with other teachers had a stronger sense of success. Thus, this proves that environment or teaching method plays an essential role in teachers' teaching. And The reason why environment and teaching would be a necessary part of teacher's teaching is that most teachers' traditional lesson plans have been used for a long time, so they are very familiar with their course schedule and would be confident. But in terms of online teaching, their lesson plan might need some changes. Teachers don't know if this course is suitable for them to deliver online and whether changes are good or bad for students taking the class; without support, teachers would also not feel as confident as they are in a real classroom, which could result in a decrease in teaching efficiency. In conclusion, the change of teaching method during covid-19 would be an essential factor that impacts teachers' teaching efficiency at the beginning.

2.3 Dilemma of Online Education: How Teachers Ensure the Authority of Online Examination

During the covid-19 pandemic, except for the teaching method and teaching efficiency, there would be other problems that affect teachers' online education. For example, online examinations and online assignments. Before the covid-19 happened, most classes had in-person exams to test students whether they understood the material of the course or not; for students to take exams in the classroom, it is easy for teachers to supervise students' behavior, but after the pandemic happens, teachers have one option which is to move the examination online. But some problems are related to online tests that most teachers always consider. According to the article "Remote Assessment in Higher Education during COVID-19 Pandemic" [6], Preventing cheating, copying, and plagiarism in assessment in distance education is challenging. This may overshadow the fairness and reliability of the results obtained by evaluation. Thus, according to the article, the problem that most teachers are concerned about is cheating in online examinations. In online examinations, students sit in front of a computer without a teacher supervising them; they can do anything they want, and this is the situation for online examinations; teachers are hard to control the authenticity of online examinations because of the possible violation of academic which teacher could not know. Thus, online tests make teachers think of many different methods to ensure the authenticity of examinations for all students and to prevent things that might break the authenticity from happening. In conclusion, this is a dilemma for teachers to offer online education because of the particularity of online education.

3. Online Teaching and Learning Application Status from the Student Perspective

3.1 For College Students, the Biggest Problem of Online Learning is the Time Difference Problem

For teachers, many challenges must be overcome to deliver a good lecture online. However, students also need to overcome some difficulties to learn online courses and get good grades in the final during covid-19. For example, in many universities, many students are from different countries worldwide. However, during covid-19, due to the particularity of the covid-19 pandemic, students may return to their home country because school has closed, which would cause a problem for taking synchronous online courses and jetlag. With jetlag, students could watch recordings, but they will lose the opportunity to interact with their teacher. The recording is just a video, so when students are watching this video, they are sitting in front of a computer alone which has a huge difference from when they are sitting in a large classroom to take with their classmates and could ask questions to teachers immediately. So, in this case, when they are watching videos, they can't feel the learning atmosphere and could quickly get distracted by many things in their home. This would impact students' learning effectiveness and may decrease academic performance. In addition, a survey in an article called "Factors Affecting the Efficiency of Teaching Process in Higher Education in the Republic of Serbia during COVID-19" [7] conducted by the Republic of Serbia to ask students about their satisfaction with educational service during the covid-19. One thousand four hundred forty-seven students answered this survey 70% of students think these changes negatively impacted their knowledge acquisition; only 8% think they acquired knowledge more efficiently. So, these data show student responses toward online learning, which is not good because the time for teachers and students to adapt is too short. Hence, students also have problems acquiring knowledge entirely online. In conclusion, because of the difficulties that students encounter during the beginning of online learning, like jetlag and how to adapt to ways professor present material that student needs to use, many students may result in lower academic during the semester when covid-19 just happened.

3.2 New Requirement for Students' Study Ability in Online Learning

Problems of learning effectiveness need students to find new ways to adapt to online courses, which means online courses have new requirements for students' learning abilities different from traditional classes. The reason for this is because for most online courses during the emergency era it requires students to have a higher learning ability. After all, for different kinds of problems, when students have questions regarding materials from any class, they may not get immediate feedback from teachers, so they need to find answers to their questions on their own first, which means students need to have strong self-learning ability. According to a survey conducted by the author of the article "EFL Students Perspective towards Online Learning Barriers and Alternatives Using Moodle/Google Classroom during COVID-19 Pandemic" [3], students were asked about problems they encountered online learning. In this survey, 60% of the total 25 students strongly agree that they have too many distractions and many other students agree that different problems always occur during online learning. So, this survey shows that not only do students need to have like high level of self-learning abilities, but they also need to have a high level of self-control ability to keep them away from distractions like YouTube when they are watching recordings or taking classes. When they encounter problems, they can overcome them and continue to study. Thus, to adapt and succeed in online courses, students need to have a method to keep their focus on the course rather than quickly get distracted. In conclusion, for students to succeed during the covid-19 pandemic, online courses create new requirements for students. However, if students achieve these requirements, they can improve their learning effectiveness and have better academic performance.

3.3 Different Study Habits for Student with Online Learning and Offline Learning

Before covid-19 happens, if students want to succeed in a course, they must take the class on time, finish homework, and prepare well for their exams. But when students want academic success in an online course during the emergency era, their learning habits may need to change. For example, because of the jetlag problem or the course providing videos to students, taking a class on time need to change a little bit because before assignments and exams, you need to watch these videos in your time without the teacher scheduling a time for you this would need better time management. Better time management for video and acquiring knowledge, finish the assignment. In a traditional class, teachers would schedule a time for all students to take exams, but for online courses, some courses would offer a different option for students, which is an open window for 24 hours or more, and students could take the exam on time they want to. But this also requires students to manage their time to start the exam earlier than the deadline for them to start the exam and make sure the internet and environment for students are good in cases when students are taking the exam or after student finish their exam and when they want to submit problems about internet occur which would be a big problem. In conclusion, for students to succeed in online courses, there is a difference between online and offline study habits.

4. Problems of Online Teaching During Covid-19

4.1 Problems Regarding the Immature Platform

During the beginning of the covid-19 pandemic, teachers are unfamiliar with the teaching platform, which cause many problems. For example, in some classes, teachers want students to split into different groups to have a group discussion, but unlike the real classroom, students can walk around to discuss with others; in a virtual meeting room, if students all open their microphones to speak with other classmates, the result would not be good because nobody can hear what other people are talking about. And the teacher cannot open more meeting rooms because it is inconvenient for both students and teacher. This could be a problem because teachers will lose a vital teaching method that helps students summarize their ideas without group discussion in some courses. Also, like when a teacher wants feedback from a student, it Is hard for teachers to collect student feedback online in an easy way. In conclusion, how to deliver a good lecture on an immature platform that lacks functions becomes the first problem teachers need to consider during the beginning of covid-19.

4.2 Teachers' Teaching Efficiency During Covid-19

During the time of the covid-19 pandemic, teachers need to deal with a different kind of situation for the first time, so another type of software is necessary. Online education is not only about teaching platforms like how to deliver lectures but also about how to communicate with students effectively. So, teachers at different schools worldwide try other teaching platforms and different software to make communication with students more efficient. According to a survey conducted by L Bakhmat, O Babakina, and Ya Belmaz which is the author of the article called "Assessing online education during the COVID-19 pandemic: a survey of lecturers in Ukraine" [8] Zoom, Skype, Canvas, and other virtual meeting applications were mentioned by this survey and many different applications are used not only e-mails but also Moodle, Padlet for communicating with students. This survey at the beginning of the covid-19 pandemic shows that teachers find much different software to find an effective way to communicate with students. In conclusion, besides delivering an excellent lecture to students, how to communicate with students effectively to solve their problem become the second significant problem that teacher wants to solve during online teaching

5. Problems Suggestions and Possible Solutions for Online Education

5.1 Platform Support for Teachers During Covid-19

For the problems, teachers have for teaching platform software companies also see these problems and begin to support teachers to make their online teaching easier. According to the zoom website, starting in March 2020, zoom begins to make it convenient for teachers and make new features to help teachers have a better experience in online teaching.[9] For example, the group discussion problems, zoom provides a breakout room feature that allows teachers to create small rooms in the same meeting room so that teachers can easily divide students into groups without much work. Also, zoom provides a polling feature to help teachers collect students' feedback easily by starting a poll to ask their thoughts. So, during the time of covid-19, a lot of software wanted to minimize the gap between online teaching and teaching in person to help teachers better adapt to this unique situation and to make teachers not feel that their teaching environment has changed significantly. In conclusion, teachers' problems also facilitate the development of education technology to make platforms more mature.

5.2 Future of Online Education in Higher Education

During the covid-19 pandemic, online education is the only option, but what is the future of online education in the post-pandemic era? According to an interview with an expert on online teaching and learning conducted by the author of the article "Balancing Technology, Pedagogy, and the New Normal: Post-pandemic Challenges for Higher Education." The answer to a question: What is the Role that Digital Technologies and Distance Learning can Play in Campus-based Education after the Covid-19 Experience? I think the goal now is to keep what works and blend it seamlessly with campus-based education. And teaching and learning online or intensively supported by technologies will be combined with face-to-face models [2]. So, at the beginning of the covid-19 pandemic, online education may be an option for emergencies because of the particularity of the covid-19, like social distancing and other things. But according to the answer to the interview, after more than one-year, online learning and teaching gradually matured, and teachers and students also have experienced, so online teaching could be an option for classes in the post-covid-19 pandemic era, which many things start to operate generally like student begins to go back to schools and online teaching can be combined with in-person classroom teaching. In conclusion, in the post-pandemic era, online education still has a bright future in higher education because this new teaching method provides more options for teachers.

5.3 Future Companies' Response to Online Education

During the pandemic, online education is the only option for teachers to deliver lectures to students, so the increasing usage of different software and the time of covid-19 will make software companies see that online education might be a trend in the future. So many companies upgrade the software related to education or develop different software that could support online education to follow the possible movement in the future since, during covid-19, the main and only education method for teachers and students to use is using online software. For example, the authors of the article "EdTech and covid-19 responses" write that[10] the actions they take to improve their education technology immediately during the covid-19 pandemic, like improving data collection, informing the design of school-based professional development programs and the distribution of learning resources. So, this information proves how education technology developers react to the trend of covid-19. So, because of the situation from 2020 to 2021, the limited teaching method facilitates the development of online education a lot to make online education. In conclusion, although the covid-19 changes people's daily life for a long time, from the perspective of online education tools, it makes online education tools have fast development.

6. Conclusion

Through research, this paper founds that students and teachers are forced by covid-19 to develop new ability and platform that uses covid-19 to have fast development. Students during covid-19 overcome difficulties and have new study abilities to manage their time to watch lecture videos and take tests on time because online courses have new requirements for students to achieve academic success. Also, there is a difference between online and offline study habits for the different study environments. For teachers during covid-19, the most critical change is the change of teaching method from the traditional classroom to online. Moreover, during the covid-19 pandemic, besides delivering a good lecture, teachers also need to find different software to communicate effectively with students and keep their teaching efficacy the same as in a traditional classroom to ensure student learning. Because of Covid-19, online teaching platforms and software companies developed very fast. The reason is because of the massive use of online teaching and learning platform; many software companies upgrade their platform soon and add education features to support teachers. Therefore, after more than one year of using the platform by teachers, teachers and schools decided to add online education as a regular option for future teaching. Thus, the future of online education is very bright in schools. In conclusion, this paper down research on how online education develops in colleges and universities during using covid-19 which researchers have not studied a lot. In future research, researchers can have more research on how online education mixes regular in-person classes and how students respond to this, which this paper does not research. And in the future online education might be a trend that more and more schools and teachers could accept as a new teaching method.

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