Analysis of the Disadvantages and Advantages of Online Education During the COVID-19 Pandemic

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Abstract: The COVID-19 pandemic has endangered people's lives and restricted daily activities. To ensure the safety of students and instructors, education institutions were forced to change to online learning. This shift has brought many unknown challenges and significantly disturbed students' learning progress. To explore deeper into the impacts on students' learning, the main goal of this study is to analyze the potential challenges and opportunities distance learning has through several previous studies. Datasets are collected through both qualitative and quantitative methods such as questionnaires. Both disadvantages and advantages are highlighted to provide a more comprehensive understanding of how online learning affected students. More challenges are reflected by students than advantages and future suggestions on how to overcome obstacles are also discussed. The COVID-19 outbreak has provided people the chance to establish the foundation for the adoption of online learning. This article seeks to offer a thorough analysis of the pandemic's impacts on online education and indicate limitations as well as opportunities.

Keywords: online education, COVID-19, online platform, advantages, disadvantages

1.　Introduction

At the end of 2019, a deadly pandemic swept the globe and since then, countries struggled, the economy stagnated, and people suffered. According to data provided by CDC, 385,676 people died in the US, 463,203 people died in 2021, and 243,986 people died in 2022 [1]. The number of death cases in the US was at its highest peak in 2021 and it subsided slowly after. During the pandemic, governments and medical officials have established some prevention policies such as staying 6 feet apart from another individual and wearing masks at all times. Not only did the economy and industries encounter obstacles, but education systems all over the world have also faced unprecedented challenges. For the safety of both students and faculties, schools and universities transitioned from in-person to online learning so that students can still learn. In the spring of 2020, "77% of [US] public schools moved to online distance learning and 84% of college students reported having some or all classes moved to online-only instruction" [2]. A majority of schools took the alternative of starting distance learning. However, this sudden shift in learning methods and environments is new to everyone and posed many challenges while also opportunities.

　Online learning is a learning style in which information is delivered by teachers through online platforms. Students can access the classroom and classroom materials any time they want as long as they have internet. Digital platforms commonly used in the US include Zoom, Google Meet, Google

classroom, canvas, and many more. They have features that allow teachers and students to interact online and share course features such as whiteboards, quizzes, discussions, calendars, and polls. Since the transition was made at the beginning of 2020, the number of zoom meetings over time has increased tremendously, and by 2021, a total number of 2600 billion zoom meetings are being made [3]. Similar trends are evident for other digital platforms over the course of two years. Although digital platforms accommodate people's new needs by developing new features, obstacles to distance learning still exist.

To analyze the full scope of how remote learning impacted students, both the disadvantages and advantages are examined in this research. The study is a review of various research on how students perform in online settings and their opinions on the quality of online education. This article will summarize the disadvantages and advantages of online learning and will help recognize the necessary changes that would make distance learning more feasible and beneficial.

2. Disadvantages of Online Learning

There have been many challenges involving online education. While teaching faculties have tried their best to provide the best learning experiences for their students, many students found online learning unsuccessful and unproductive. Numerous past studies show the disadvantages of online learning include mental, physical, and educational challenges.

During online learning, students show increased signs of mental disorders such as anxiety, depression, stress, and difficulty concentrating. A study done at the Bachelor Program of the Department of Commercial Administration of Bengkalis State Polytechnic demonstrates the increased likelihood of getting mental disorders. To study the psychological impact of online learning, the research used quantitative analysis in which the data is gathered in an online questionnaire format. A total of 144 students participated in this study and the result is examined. According to figure 1 from the study, students begin to show signs of anxiety [4]. There are 30% of the students show normal anxiety levels, 13% have mild anxiety, 26% have moderate anxiety, 14% have severe anxiety, and 17% of the students have extremely severe anxiety [4]. The study also examined the depression and stress levels of students. Figure 2 and figure 3 summarize the distribution of data on different depression and stress levels of students. In figure 2, 71% of students have normal or above-normal depression levels, 11% have mild and moderate depression, 4% have severe depression, and 3% of the students show extremely severe depression levels. In figure 3, 54% of the students have normal stress levels, 18% have mild stress, 12% have moderate stress, 13% have severe stress, and 3% have extremely severe stress levels. From these three pie charts, students are more prone to have raised anxiety levels since the combination of mild, moderate, severe, and extremely severe stress levels significantly outweighs the percentage of students who have normal stress levels. Online learning can also cause difficulties in concentration. Since students learn at home, a place they are comfortable with, there will be a lot of school-unrelated distractions, "There were many distractors such as family members, noise, and housework" [5]. The study used anonymous online questionnaires on a total of 270 participants of which 166 are women and 96 are men. Students report that concentrating is the biggest challenge during their online learning because they usually associate their house with relaxation. When it comes to tasks that require high productivity and intensive concentration, their room is just not the best place. Many think that they would "work better in a separate environment from home" [5].
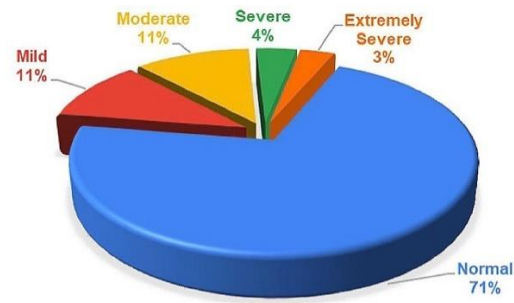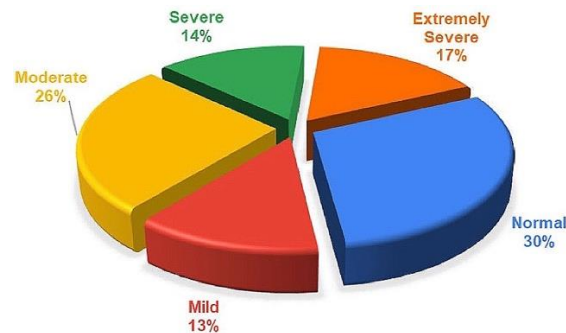
Figure 1: Student Anxiety Level [4].

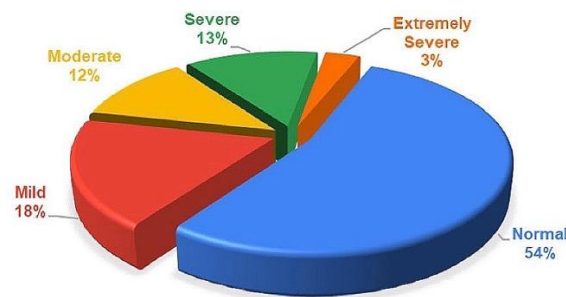Figure 2: Student Depression Level [4].

Figure 3: Student Stress Level [4].

Students also encountered physical challenges during online learning such as poor internet connection and difficulty maneuvering through online meeting platforms. According to a study, when students were asked whether they agree with the statement "lack of computer skills makes me uncomfortable during online classes", 40.8% of the students chose to agree [6]. For most people, devices such as computers and phones are easily accessible and manageable. But to students who are financially incapable, obtaining a proper device and learning the fundamental skill to use the device hinder and negatively impact their learning experiences. Figure 4 shows students' responses on their satisfaction with different teaching modes. 84.2% of students agree that technical issues disrupt the flow and pace of online classes [6]. Not only can technical issues on the students' side disrupt the class, but teachers who don't know how to properly use online learning platforms can also hinder students' learning progress and cause negative experiences for both the students and them.

Online v/s classroom teaching mode		
Online classes save time	Agree	49.7%
	Disagree	29.8%
Technical issues disrupt the flow and pace of online classes	Agree	84.2%
	Disagree	4.8%
It is difficult to clarify doubts in online classes compared to classroom mode	Agree	67.5%
	Disagree	17.1%

Figure 4: Students' Response to Online and In-person teaching mode [6].

Lastly are educational challenges. Educational challenges include problems such as ineffective student-teacher communication and poor education quality. A study aiming to investigate the effect of online learning on college and university students in India use online questionnaires to collect data from students. A total of 407 students participated in the survey and "15.4% reported the online classes to be less interactive, no communication between students or with teachers and makes it harder to participate" [6]. Communication is the key when comes to student and teacher interaction because when students are struggling, effective communication allows teachers to help the students. Online learning made effective communication harder because the only way students can contact their teachers is through email. However, every teacher has their own habit of checking email; some check their inbox every day and would reply back to students' messages immediately while some rarely check their inbox and takes a long time in responding. This causes many students to feel helpless and less interactive.

3.   Advantages of Online Learning

Despite the various disadvantages and challenges students faced during remote learning, there are also advantages and opportunities that come along with the disadvantages. While being in a familiar environment can sometimes cause distractions, a comfortable learning environment can make students feel safe and more productive. Online learning is also more flexible for some students because transportation time is eliminated.

While being in a familiar environment can sometimes cause distractions, a comfortable learning environment can make students feel safe and more productive. The Australian Faculty of Business and Economics conducted a study that targets students' learning performance and experience in a different learning environment. Subjects of four groups of 21 students each are observed through a 12-week semester on their behaviors in different learning environments. After the 12-week period, researchers found that students are more inclined to stay in tutorial sessions because of the relatively small size of the classroom and how tightly students are dispersed. One student says that he "enjoyed the tutorials a lot more than the lectures because it's a collaborative space where [he] feels a bit safer… to ask questions and get that immediate feedback" [7]. When students sit in large lecture halls, they are more dispersed in the room and they fall asleep and get wary easily. However, when they are in a more comfortable study setting, they are more inclined to ask questions and the communication between students and instructors is more effective. According to a student, "in lectures, it's very daunting. You don't want to make a fool of yourself if you get the answer wrong. So that's probably why everyone stays quiet" [7]. Most students prefer to study in an environment where they feel secure to ask questions and get feedback. Thus, online learning gave them the flexibility to choose their learning setting as they don't have to stay in the same classroom every day. Whether they prefer to study in a quiet library or in a relaxing cafe, whether they prefer to study alone or study with a small group of friends, this flexibility allows them to choose according to their study habits.

Not only did online education give students flexibility in learning environments, but their free time is also more flexible and abundant. During online learning, some schools and universities shorten their class time. This gave students more free time in which they can distribute them in their own way. Even for schools and universities that retained their original schedule, the time students spend on transportation is significantly reduced, giving students more sleeping time or free time. In a study, students respond that they were "satisfied with the fact that they could more meaningfully use the time they had previously had to invest in travel between face-to-face classes" [8]. Many students spend the time to engage and reconnect with family members. Since many businesses shut down or went online during the COVID pandemic, parents and other family members transferred their working place to home. According to a study, "parents estimate that they spend an average of 2.5 hours each day helping their children with schoolwork" [9]. Without online learning, students wouldn't be able to have this opportunity to spend more time with their loved ones.

4.   Future Outlooks

The development of technology and the COVID-19 pandemic have put great emphasis on the importance of distance learning. This study is a review of multiple research that concludes the advantages and disadvantages of online learning. By comparing 6 different studies, it's logical to conclude that the disadvantages outweigh the advantages. The goal of schools that decide to move to learn online is to provide a safe and healthy environment, enhance the physical and mental health of students, and lead a productive learning habit for students. In addition to COVID prevention work, the psychological changes students have to go through and how to better help students succeed through online education is the key area on which schools should focus. To improve the remote learning experience for students, the following should be considered in doing.

First, to increase the education quality for students, teachers and teaching faculties should be trained on how to use different online platforms. Many teachers during online learning struggle to maneuver between different online learning platforms such as Google Meet, Zoom, Google Classroom, and many more. This can cause inconvenience on the students' side because their class time would be wasted as their teachers spend most of the time trying to figure out how to turn on the mic or put on a slideshow. Training the teachers on the basics of how to use different learning platforms, it would make students' learning experiences much better and enjoyable.

Second, to ensure that students are obtaining a healthy mental state, schools and universities should offer special counseling for students. Since many students during online learning became more anxious and depressed, checking on and following up with students' mental state is crucial for students to establish a healthy mental state and physical well-being. Many students feel that they don't have anyone who would listen to them that they could talk to. This could cause students to be more depressed and anxious. According to experts, "school psychologists and school counselors provide critical mental health supports to children and youth in school" [10]. Providing them the opportunity to speak out about their concerns or worries can greatly reduce their mental burden. In addition, schools should conduct online social events more often to ensure that students are socializing and making friends even if they couldn't do it in person. Many students during online learning struggle to make friends, which causes them to be lonely and depressed. Social events give them the opportunity to meet new people and experience what in-person schooling might look like.

Lastly, to make sure that students have access to the internet or online learning devices, schools should offer the opportunity of free devices. One of the main concerns some students may have is the inaccessibility to technologies such as phones, computers, or tablets. The inaccessibility of devices greatly hinders students' learning journey and would make them worry about it constantly. Unstable internet and a bad network would also affect students' learning experience since if their network kept getting disconnected, students wouldn't be able to learn as well as students who have stable internet.

By providing students with free devices such as chrome books, schools help students overcome the basic need to be successful in online learning. Schools should also allow some students who don't have stable internet to have classes in school where the stability of the internet is ensured.

5. Conclusion

The sudden outbreak of the COVID-19 virus at the end of 2019 became an international haphazard that caused danger to people's health and inconvenience to their lives. The transition from traditional in-person learning to online learning was a major move in education systems worldwide and created many challenges. The majority of students find remote learning difficult and ineffective. Results from the study display more disadvantages of online learning than advantages. Online learning frustrates students when they encounter technical difficulties or their instructors couldn't figure out how to properly use digital platforms. Student-teacher communication is ineffective as sending emails or messaging is less productive than talking things out face-to-face. Isolation and the lack of socialization during the pandemic quarantine caused many students to be increasingly anxious, depressed, or stressed. They have no one to talk to and problems they have encountered during remote learning stress them out. Although the disadvantages outweigh the advantages of online learning, this new way of learning provides students with unprecedented opportunities. The degree of freedom given by online learning, such as allowing students to choose their own learning environment, enhanced students' level of concentration. Online learning also gave more flexibility to students as unnecessary time spent on transportation can now be distributed to more meaningful use such as extra sleep or more time to engage with family members. While the COVID-19 pandemic situation has ameliorated over time and many educational institutions went back to the traditional style of learning, online learning remains an important progress in education systems and will continue to improve and adapt.

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