

Original Article

ONLINE LEARNING DURING PANDEMIC COVID-19 AND ITS IMPACT ON UNIVERSITY STUDENTS IN MALAYSIA

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ABSTRACT

The novel coronavirus is an unprecedented global war. Many countries have made a drastic effort to mitigate the transmission of COVID-19 among their population. Most students worldwide are affected when their schools and institutions have started to close their operations to curb the spread of this contagious pandemic. Thus, online learning had been introduced to continue the teaching and learning processes. This study is to look for various factors affecting students related to online learning. A prospective cross-sectional study was conducted involving 390 undergraduate students currently studying IPTAs and IPTSs in Malaysia from 27th March 2022 to 2nd April 2022. The questionnaire was generated via Google Form. It was distributed through social media platforms (WhatsApp, Instagram, Facebook). Data was collected after taking informed consent from the participants. There was a significant difference between gender in the effect of online learning on their study (P -value < 0.05 ; $n = 390$). There were also significant differences between different age groups and sleep deprivation during online learning, social media distraction and student who seek professional help for mental health issues (P -value < 0.05 ; $n = 390$). ANOVA analysis further indicates significant differences in mental health issues during online learning between public and private universities and sleep deprivation during online learning between private and public universities (P -value < 0.05 , $n = 390$). This research showed that online learning during pandemic COVID-19 had a significant impact on study, financial burden, physical activities, sleep qualities, mental health status, and social media distractions to varying degrees. This study can be improved by increasing sample size, distributing questionnaires equally among each variable and collecting data over a longer period.

INTRODUCTION

COVID-19, also known as coronavirus disease, is caused by SARS-CoV-2 originating from Wuhan, China, in December 2019. In a blink of an eye, its spreading has affected the populations of many countries. Up to date, the world population is struggling to handle this COVID-19 outbreak, and on 12th March 2020, the World Health Organization (WHO) has confirmed COVID-19 as a pandemic that threatens human life [1]. Malaysia, to be added to the total of 79 states worldwide, to be in a state of emergency in response to the pandemic [2]. There were thousands of daily cases reported in Malaysia and even up to hundreds of thousands that have been recorded by other countries.

The invisible enemy that the people are facing today has also affected all the industries in the world, including the education sector. Due to the virus's spread, the global higher education landscape has shifted drastically in recent months [3]. Most of the

students worldwide are affected when their schools and institutions have started to close the operations to curb the spread of this contagious pandemic. Many countries have made a drastic effort to mitigate the transmission of the COVID-19 among their population, i.e., by the widespread closure of primary and secondary schools, colleges, hospitals, universities, and other public facilities.

Based on the existing large body of literature, closing educational facilities is one of the most effective ways to sever vital transmission chains and reduce the dissemination of virus infection in the population [4]. In terms of the increasing alarm regarding the spread of COVID-19 pandemic, many universities worldwide have decided, either cancelled or delayed all campus gatherings, including face-to-face lectures, seminars, conventions, and intra and inter-university sports tournaments, and other activities. The university management has worked quickly to

transform their courses and services from a conventional delivery style (face-to-face approach) to an online delivery learning [5].

Online teaching is becoming a normalization approach and no longer a new method of delivery for most university students. The faculty staff is trained to adopt online learning systems as the sole mode of delivery teaching or as a supplement to face-to-face instruction (also known as a hybrid platform). Therefore, COVID-19 transmissions are confirmed will incur other effects (internally and externally) upon the parties involved, especially on the student [6].

This study was conducted to identify the impact of online learning during COVID-19 pandemic with parameter of study, financial burden, physical activities, sleep qualities, mental health status and social media distractions.

METHODOLOGY

In the midst of the global pandemic, Google Form was used since it appeared to be a simple way to create a questionnaire as well as gather information more systematically. The source population (target population) is from the population of university students in IPTA/IPTS in Malaysia. A random sample among the population of university student in Malaysia was surveyed for the study. It comprised 17 questions and aimed at gathering data from the population of university student in Malaysia. In a database, we have over 390 responses. The participant's age is above 18 years old. The individuals' sociodemographic information was obtained but we did not collect any information about the respondent's full name, IC number, or actual address; therefore, they will stay anonymous.

Inclusion criteria

All university students in IPTA/IPTS age ≥ 18 years old were included in this study, however foundation/matriculation and postgraduates' students were excluded.

Research Tools and Materials

We created our own questionnaire by using Google Form, which includes six key questions about the relationships of the factors such as study, sleep qualities, mental health issue, financial burden, distraction, and sedentary lifestyle with online learning. A pilot test survey was also administered to 20 people randomly to assess its clarity, relevance, and acceptance.

Data Collection

The study starts from 27th March 2022 until 2nd April 2022. The link to the survey was distributed through social media platforms such as Facebook, Instagram, and WhatsApp. Participants were urged to distribute the survey to their friends and acquaintances. As a result, this can be a very effective method of raising the number of respondents.

Data Analysis

The SPSS statistical package version 27 was used to examine all of the data. For categorical variables, the Likelihood Ratio (chi-square) was used to see the association of two groups. T-test and one-way ANOVA tests were conducted to assess differences between groups for continuous variables. A p-value of less than 0.05 was considered significant for all of these statistics.

RESULTS

Sociodemographic data were summarise in Table 1-5. Result showed that female have the largest sample size in this study based on gender, with 197 (50.5%) compared to male 193 (49.5%). Age of 18-25 years old have the largest sample size with 366 (93.8%) followed by age of 26-30 years old 22 (5.6%) and age more than 30 years old with 2 respondents (0.5%). Result of the questionnaire were tabulated in Table 6-22.

Table 1: Gender of Respondents

Gender	Frequency	Percent (%)
Male	193	49.5
Female	197	50.5
Total	390	100.0

Table 2: Age of Respondents

Age	Frequency	Percent (%)
18-25 years old	366	93.8
26-30 years old	22	5.6
> 30 years old	2	0.5
Total	390	100.0

Table 3: Types of University

University	Frequency	Percent (%)
IPTA	304	77.9
IPTS	86	22.1
Total	390	100.0

Table 4: Education Levels

Education Levels	Frequency	Percent (%)
Diploma	65	16.7
Degree	325	83.3
Total	390	100.0

Table 5: Academic Year

Academic Year	Frequency	Percent (%)
Year 1	52	13.3
Year 2	130	33.3
Year 3	110	28.2
Year 4	83	21.3
Year 5	15	3.8
Total	390	100.0

Table 6: Q1: Online learning during the COVID-19 pandemic affects my study

Likert Scale	Frequency	Percentage (%)
Greatly Affected	79	20.3
Affected	223	57.2
Not Sure	26	6.7
Slightly Affected	49	12.6
Not Affected	13	3.3
Total	390	100.0

Table 7: Q2: Online learning makes it difficult for me to understand the course

Likert Scale	Frequency	Percentage (%)
Strongly Agree	76	19.5
Agree	238	61
Not Sure	37	9.5
Disagree	31	7.9
Strongly Disagree	8	2.1
Total	390	100.0

Table 8: Q3: Face-to-face learning makes me concentrate more during classes

Likert Scale	Frequency	Percentage (%)
Strongly Agree	102	26.2
Agree	206	52.8
Not Sure	47	12.1
Disagree	30	7.7
Strongly Disagree	5	1.3
Total	390	100.0

Table 9: Q4: Online learning causes difficulty to fall asleep or to maintaining sleep

Likert Scale	Frequency	Percentage (%)
Strongly Agree	59	15.1
Agree	181	46.4
Not Sure	71	18.2
Disagree	61	15.6
Strongly Disagree	18	4.6
Total	390	100.0

Table 10: Q5: I slept for long-duration than usual during online learning in COVID-19 pandemic

Likert Scale	Frequency	Percentage (%)
Strongly Agree	79	20.3
Agree	199	51.0
Not Sure	48	12.3
Disagree	56	14.4
Strongly Disagree	8	2.1
Total	390	100.0

Table 11: Q6: Online learning affects my quality and quantity of sleep in a wrong way

Likert Scale	Frequency	Percentage (%)
Strongly Agree	62	15.9
Agree	188	48.2
Not Sure	67	17.2
Disagree	64	16.4
Strongly Disagree	9	2.3
Total	390	100.0

Table 12: Q7: Online learning during pandemic COVID-19 affects my mental health (such as depression, stress, and anxiety)

Likert Scale	Frequency	Percentage (%)
Strongly Agree	60	15.4
Agree	195	50.0
Not Sure	54	13.8
Disagree	54	13.8
Strongly Disagree	27	6.9
Total	390	100.0

Table 13: Q8: I seek professional/counsellor help for my mental health issue

Seek professional/counsellor	Frequency	Percentage (%)
Yes	49	12.6
No	341	87.4
Total	390	100.0

Table 14: Q9: You quickly get distracted by social media during online classes

Likert Scale	Frequency	Percentage (%)
Strongly Agree	84	21.5
Agree	203	52.1
Not Sure	41	10.5
Disagree	53	13.6
Strongly Disagree	9	2.3
Total	390	100.0

Table 15: Q10: You only switch to social media when you find online courses boring

Likert Scale	Frequency	Percentage (%)
Strongly Agree	69	17.7
Agree	267	68.5
Not Sure	27	6.9
Disagree	25	6.4
Strongly Disagree	2	0.5
Total	390	100.0

Table 16: Q11: You find that social media distractions are the biggest challenges facing during online classes

Likert Scale	Frequency	Percentage (%)
Strongly Agree	73	18.7
Agree	226	57.9
Not Sure	41	10.5
Disagree	41	10.5
Strongly Disagree	9	2.3
Total	390	100.0

Table 17: Q12: Online learning can save cost of my parents and I

Likert Scale	Frequency	Percentage (%)
Strongly Agree	68	17.4
Agree	232	59.5
Not Sure	57	14.6
Disagree	31	7.9
Strongly Disagree	2	0.5
Total	390	100.0

Table 18: Q13: My parents have to spend more to buy internet data so that my online learning runs smoothly

Likert Scale	Frequency	Percentage (%)
Strongly Agree	43	11.0
Agree	225	57.7
Not Sure	50	12.8
Disagree	62	15.9
Strongly Disagree	10	2.6
Total	390	100.0

Table 19: Q14: I don't have to spend money on transportation to go to educational institutions while learning online

Likert Scale	Frequency	Percentage (%)
Strongly Agree	79	20.3
Agree	226	57.9
Not Sure	48	12.3
Disagree	34	8.7
Strongly Disagree	3	0.8
Total	390	100.0

Table 20: Q15: Online learning affects my physical activity such as jogging, cycling, and doing sports

Likert Scale	Frequency	Percentage (%)
Greatly Affected	33	8.5
Affected	190	48.7
Not Sure	77	19.7
Slightly Affected	63	16.2
Not Affected	27	6.9
Total	390	100.0

Table 21: Q16: I have less time doing any sports and physical activities due to online learning

Likert Scale	Frequency	Percentage (%)
Greatly Affected	39	10.0
Affected	202	51.8
Not Sure	56	14.4
Slightly Affected	78	20.0
Not Affected	15	3.8
Total	390	100.0

Table 22: Q17: I can do lots of physical activity during face-to-face learning than during online learning

Likert Scale	Frequency	Percentage (%)
Strongly Agree	60	15.4
Agree	219	56.2
Not Sure	55	14.1
Disagree	53	13.6
Strongly Disagree	3	0.8
Total	390	100.0

DISCUSSIONS

Online Learning and Academic Performance

Online coursework generally yields worse students' study than in-person coursework. The negative effects of online course-taking are particularly pronounced for less-academically prepared students and for students pursuing bachelor's degrees. New evidence from 2020 also suggests that the switch to online course-taking in the pandemic led to declines in course completion. From the study, the percentage of respondents whose study are affected by online learning are high (57.2%) which shows majority of the students' study are affected by online learning. This may be due to lack of motivation as a challenge that they face when learning online. This could be attributed to lengthened university closures and significantly reduced social interaction with their peers [7-10].

Internet accessibility is also a key issue for many students and poor internet connection is a challenge for them. Unclear & inconsistent learning structures remains to be a key challenge that students face in online learning. Many students share stories of unproductive classes and lack of clarity surrounding how & when they will be learning [11]. Student whose academic courses are mostly conducted in theory are expected to be less affected compared to student whose academic course have more practical session or hands on approach. From our research, we find that study had significant association based on gender, education level and academic year.

Online Learning and Sleep Qualities

The percentage of respondents whose sleep qualities are affected by online learning are high (46.4%) and almost half of the respondent agree that online learning result in longer duration of sleep. Home confinement during this pandemic COVID-19 result in more time spent at home with no or little physical activity that could led to more tendencies to increase their daytime sleep. In other way, due to workload and submission of assignment on a given period of time, this can affect their night-time routine [11-13]. Some of them might use a lot of their time to complete the assignment and this may affect their sleep qualities. Consequently, lack of sleep among this category of student makes them having problem with their cognition such as difficulty in organizing thought, concentration difficulties, feeling sleepier during online classes, and depressed [14]. From our study, we find that students experiencing higher risk of experiencing changes in sleep pattern and affecting the qualities. This is influenced further by education level and academic year. From our perspective, we assume that degree student experience higher level of workload or assignment as most of them are coming from science-related courses which seem to be more complicated compared to diploma students. Student entering their final year will become more busy than usual compared to new student in their first year of university life.

Online Learning and Mental Health Status

While for mental health status, half of the respondents (50%) are affected and most of them (87.4%) are not keen to seek professional/counsellor help. Numerous studies have shown social isolation can cause higher rates of negative outcomes for the mental and physical health of individuals [15-16]. Other studies have found that face-to-face interactions can help reduce depression and anxiety. Less social interaction may increase feelings of social anxiety and pressures [17-18]. Since the COVID-19 pandemic, there's a lack of interaction and students face social isolation. This greatly impacts a student's mental health. The lack of social interaction in online learning leads to feelings of loneliness, lack of motivation, and isolation [19]. There is this newly coined term during the COVID era, called "Zoom Fatigue". The term Zoom Fatigue refers to feelings of exhaustion after long Zoom classes or video conference calls. It may not be a formal diagnosis but Zoom fatigue does exist especially in virtual learning. During an online class, there's information overload plus facing the screen for prolonged periods is mentally draining [20-21].

It's more challenging for students to learn new information, and even though they just sit in front of the computer, they feel like they are physically tired. Virtual learning fatigue is real, and it may lead to anxiety and stress for both students and professors. Staying focused on online classes is a challenge. Separating home life and class time, not following a routine schedule, the distractions at home, caused students not to be able to concentrate well with their classes. As a result, students tend to procrastinate and set things aside, then deadlines are missed. This causes pressure, stress, and anxiety to both students and their parents. Student wellbeing during the pandemic remains an ongoing and major concern for higher education institutions across the globe [22].

The world has witnessed protests with students marching through cities and occupying buildings to express their anger and frustration over a perceived lack of mental health support received from universities. There is also a surge of media reports on the rising rate of poor mental health among students as a direct result of the COVID-19 pandemic, with warnings from student representatives of the worsening of an existing mental health crisis among students internationally. Some students are facing consequences like boredom, stress, anxiety, and depression. The lack of physical contact, outlets for socializing and communication with peers and teachers, restrictions on travel, and reduced physical activities have contributed to this emotional issue [23].

Other sources of stress for some students include the inability to afford educational resources such as computers, separate rooms conducive for learning, high-speed internet for each family member who require educational facilities, and new expenses associated with the procurement of computing

devices as a consequence of the change in educational modality. Distance learning is also limited in the ability to facilitate all the learning outcomes of professional education that require hands-on practice such as medicine, dentistry, nursing, nutrition, and other allied health courses. In the case of countries with partial or no lockdown, students need to maintain physical distancing and grapple with the constant fear of contracting infection or spreading it to a family member, fear of job loss, and the inability to pay for the basic life needs such as food or housing expenses.

The observed changes in sleep pattern and increase in screen use by students have been previously reported. A significant deterioration in sleep quality of students during the pandemic may be due to late night browsing on social media, chatting, and checking online news from mobile devices as well as the increased use of screens for educational purposes, which is also associated with late night use of electronic devices. The significant increase in exposure to screens may lead to longer waking hours and reduce sleep duration as a result of blue light emitted from mobile screens, inhibiting melatonin production. This adjusts the sleep-wake cycle with a resultant increase in stresses, depression, and negative emotions. Our observation that students reported changes in sleep pattern and increases in screen use may make the explanations proffered by prior studies applicable to our study findings [24].

Online Learning and Financial Burden

Online learning also gives negative impact in term of financial. This is because most of them have to spent more on internet data services. Student who are part timer job to support their lives or those that lose their jobs might experience financial hardships. This can lead to stressful situation which eventually affecting their mental wellbeing. Online class alone are putting them in a stressful environment already as they need to spend extra money for internet data. For students who come from lower social economic status or backgrounds often felt more burdened plus their house area have lack of internet access. Having lack of proper devices, internet access and proper environment resulted in most of the education delivered by educators are not well received by the students themselves. Financial burden can indirectly lead to mental health problem. At the same time, online learning can also give positive impact in term of transportation cost [25].

Online Learning and Physical Activities

Besides, online learning led to sedentary lifestyle as their physical activities such as jogging, cycling, and doing sports are affected. COVID-19 pandemic and the resulting lockdown have restricted many elements of our environment. From our research, it shows an overall negative effect on physical activity. This confinement may be due to increase in sedentary behaviour and consumption of less healthy foods. As the students had to continue their classes via online platform, their social lives were

limited due to prohibition on going outside. During this online learning phase, physical activity could have been an opportunity to pass the time, or, conversely, sedentary behaviour could have increased. Their mental health state and low motivation could have either facilitated or interfered with the decision to exercise.

The hypothesis put forward was that students' sedentary behaviour would have increased during lockdown since they were confined to their homes, and that their physical activity would have decreased since they could not go outside to exercise. In fact, not only among university students but all people would have modified their lifestyles during this lockdown period, with an increase in sitting time due to people spending more time at home and there was also a reduction in the amount of time spent on physical activity. We do not know the exact reasons why physical activity increased, and we do not know if the effects on physical activity habits would have been maintained if the lockdown had gone on for longer [26].

In the study, we can observe that the physical activities are influenced by academic year and level of education. We considered that the higher the academic year the more sedentary lifestyle they could have during this lockdown as they have more and complex assignment to be completed and submitted, thus increasing their screen time, and sitting time.

Online learning and Social Media Distraction

For many students, the transition from in-person to online classes from home comes with many distractions. Locked indoors with family, roommates and pets running about is not an ideal academic environment. With social isolation, limited activity, and the very real option of spending the entire day in bed, some are finding it tough to remain focused. There are significant differences on the relationship between online learning and social media distractions in which 52.1% respondent agree and 21.5% strongly agree. Outside of university, when the time is on your hands, instead of working on homework and studying for tests and quizzes students usually turn to their smart phone, computers, and tablets. Applications such as Netflix and Hulu provide multiple shows and movies which students can spend hours watching [27].

Moreover, the online platform for their classes enables the students to turn off the video and thus they feel the freedom to do anything without being seen by their lecturers. Online classes are more towards one way teaching which can distract their focus especially when the classes continue for more than an hour. Students tend to be distracted by social media especially when the classes become boring, and they lost their focus. Most of them agree that social media distraction is the biggest challenge faced during online classes even though there are so many other distractions that

come from the home environment and their family. This may eventually affect their study. Compared to a lecture-supervised classes, online students are more likely to send text messages, answer email, chat on Facebook, WhatsApp, watch videos on Youtube, surf on google, play video games, or listen to music while taking an online course. A study conducted by researchers at Kent State University confirmed what for many seems obvious, online students multitask more than their peers in classes. The result is poor academic performance. The researchers analyzed the behavior of 300 university students who took online and face-to-face courses, 25% said they were more likely to listen to music, send text messages, chat on social networks, or surf the Internet in online courses than in a classroom [10,27].

Online students who had a greater tendency to multitask, scored lower in academic tests compared to their performance on face-to-face courses. Even those students who assumed great ability to self-regulate this behavior could not resist performing other tasks in their online classes. They multitasked with a frequency similar to that of other students who felt more prone to distraction.

Andrew Lepp, a professor at Kent State University, points out: "in face-to-face courses, a physically present teacher and the presence of conscientious students help to enforce classroom policies and behavioral norms against multitasking. Because multitasking during educational activities has a negative impact on learning, it is important to develop methods for reducing this academically disadvantageous behavior, particularly in the increasingly common online learning environment" [28].

Study Limitation

With a short period this research managed to get minimum of 385 respondents among all diploma and degree student in public and private universities in Malaysia. This surely would not represent the actual population of university students. In order to achieve more accurate and excellent result in term of precision, a large sample size and increasing the number of respondents are needed to get higher accuracy.

Moreover, in COVID-era, method of collecting data from the respondents was limited to online. It is not unusual to have some of the respondents who do not want to cooperate as they might have problem with internet access or lack of knowledge regarding the research. Maybe some of them might having busy schedule or working that make them unable to get involved which result in difficulty to collect data. Because our target population is among the university students, so most of them may not have time to answer our questionnaire due to their busy with online classes.

Study Bias

Bias can occur at any phase of research including

study design or data collection. Bias is a form of systematic error that can affect the scientific investigation and distort the measurement process. There are some biases in this study, such as in term of education level which dominating the number of respondents. We were managed to gather data from degree student for a total of 325 which account for 83.3 % while diploma student only 65 which accounts for only 16.7 % of our respondents.

Furthermore, the bias can also be seen from the university involved. Respondents from public universities (304 with percentage of 77.9%) are higher compared to respondents from private universities (86 with percentage of 22.1%).

CONCLUSION

The result of this research prove study, financial burden, physical activities, sleep qualities, and mental health status had significant impact towards online learning during pandemic COVID-19 There is correlation between online learning and social media distractions. The result also shows that online learning during COVID-19 pandemic affected the study of most participants with varying degrees.

In the future, this study can be improved by increasing sample size, distributing questionnaire equally among each variable, increasing randomness and collecting data in a longer period. Further study can be conducted to identify the common problems and challenges with online learning and how it effects student from different academic courses and social status.

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