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Abstract

Due to Covid-19 pandemic, we may have to live in the 'new normal' for quite a long period of time. We have learned to adapt our lifestyles with this Covid-19, and to adjust to a 'new normal', which is a new way of living and going about our lives, work and communication with the people around us. Adaptation and changes are considered 'new normal'. Education is one of the sectors that has been most impacted by the pandemic. In this regard, the form of education too has changed during the Covid-19 pandemic in which teaching and learning is conducted remotely through digital platforms. The university lecturers have opted online learning approach and electronic devices as mediator of communication to replace face-to-face learning. This has led to a robust and more interactive way of learning, whereby both students and lecturers find engaging. However, there are some issues and challenges with this online learning approach. Thus, the objectives of this paper are to identify the constraints of the online learning approach faced by the students and to examine the perception of the lecturers regarding the constraints. Data collection was mainly through qualitative approach. Descriptive analysis of survey questions is done on the lecturers' perspectives. The understanding of the challenges could become a source of reference for the university management and lecturers in their efforts to provide the platform for innovative approaches for the 21st century learners' student-centred learning.
Keywords: Covid-19, Education, New Normal, Online Teaching, Online Learning

Introduction

Due to the Covid-19 pandemic, we may have to live in the 'new normal' for a very long time. We have learned to adapt our lifestyles with this Covid-19, and to adjust to a 'new normal', which is a new way of living and going about our lives, work, and interaction with the people around us. Adaptation and changes are considered 'new normal'. Under this 'new normal' environment, parental expenditure inclined more towards electronic devices as a medium for home-based learning as reiterated by the government (Ating, 2020). In this

unprecedented situation, online learning becomes an alternative to ensure the continuity of the form of education.

Education has changed dramatically, with the distinctive rise of online learning whereby teaching and learning are conducted remotely through digital platforms. Universities adhered to the Ministry of Education's recommendation to move educational activities to a virtual teaching model using the existing institutional software and available public digital platforms. There are some issues and challenges that are related to online teaching and learning, such as accessibility, affordability, flexibility, learning pedagogy, life-long learning, and policy (Dhawan, 2020). The lecturers of all backgrounds and ages had to prepare and deliver their classes from home, with all the practical and technical challenges this entails, and often without proper technical support (Hodges et al. 2020). The lecturers and students certainly have their perception of online teaching and learning in this 'new normal' environment.

In this scenario, the objectives of this paper are to:
- Identify constraints with the online learning approach faced by the students.
- Examine the perception of the lecturers regarding the constraints.

This paper is structured as follows: First, we present the introduction of the paper. Then, we discuss the literature review. Subsequently, we describe the methodology of the research, followed by the discussions on the results. We conclude by discussing the findings and highlighting some recommendations for the quality of the new normal of teaching and learning improvement.

Introduction
Online Teaching and Learning

According to Rapanta *et al.* (2020), online teaching and learning imply a certain pedagogical content knowledge (PCK), mainly associated with designing and organizing for a better learning experience and creating distinctive learning environments with the help of digital technologies. The PCK includes technical and administrative aspects of teaching online, for example using platforms and tools and organizing workflow.

Online learning refers to a type of teaching and learning situation in which (i) the learner is at a distance from the tutor or instructor, (ii) the learner uses some form of technology to access the learning materials, (iii) the learner uses technology to interact with the tutor or instructor and with other learners, and (iv) some kind of support is provided to learners (Anderson, 2011). Online teaching and learning as a new mode of delivery, taking into account how educating prospective teachers or lecturers online offers the possibility to develop, strengthen and complement other skills of face-to-face preparation (Sepulva-Escobar & Morrison, 2020). It provides the feeling of psychological safety to the learning community in Covid-19 afflicting period (Mishra, Gupta, & Shree, 2020).

Issues and Challenges Related to Online Teaching and Learning

Universities in Malaysia have moved their classes online to ensure continuity to the teaching and learning process and minimize the spread of Covid-19 infection (Salina, Mazlina, & Wafa, 2020). In this regard, the main concern is to ensure all students receive education online of the same quality as traditional learning sessions when learning is done remotely.

Presently, there are a lot of technologies available for online teaching and learning processes but sometimes they create certain issues and challenges (or constraints). Some examples of technical issues are downloading errors, issues with installation, login problems, and problems with audio and video (Dhawan, 2020). Besides, online teaching-learning

courses can also present some challenges for student-teachers who often tend to feel isolated facing lower self-confidence and more pressure to increase their self-learning and independent workload (Dyment & Downing, 2018). Dyment & Downing (2018) highlighted that the teachers also feel overwhelmed with the use of technology and insecure about reaching the goals of their lessons.

Several researchers had conducted studies related to teachers or lecturers' and students' perceptions of online teaching and learning amid the Covid-19 pandemic. Some of the issues and challenges that have been faced by teachers or lecturers and students while using online teaching and learning approach among others are (Dhawan, 2020; Misha, Gupta, and Shree, 2020; Rapanta et al. 2020; Selvanathan, Atikah, & Alyani, 2020):

- Accessibility: It is said that students without reliable internet access and technology struggle to participate in digital learning. Limited internet access is challenging to the students in rural areas for their studies, which also resulted in delay for the task submission (Selvanathan, Atikah, & Alyani, 2020). However, for those who do have access to technology, learning online can be more effective in many ways.
- Affordability: It is considered to be a relatively cheaper mode of education in terms of the lower cost of transportation, accommodation, and the overall cost of institution-based learning.
- Flexibility: is another interesting aspect of online learning; a learner can schedule or plan their time for completion of courses available online. However, sometimes student finds online teaching has so much of time and flexibility that students never find time to do it (Dhawan, 2020).
- Learning pedagogy: combining face-to-face lectures with technology gives rise to blended learning and flipped classrooms; this type of learning environment can increase the learning potential of the students. However, sometimes the student finds online teaching to be boring and unengaging (Dhawan, 2020). The students need personal attention, and two-way interaction is difficult to implement. Also, one troublesome issue was brought to a notice by lecturers that conducting online practical classes during the lockdown period proved difficult because it required systematic demonstration of the whole process in the presence of the students (Misha, Gupta, and Shree, 2020).
- Life-long learning: Students can learn anytime and anywhere, thereby developing new skills in the process leading to life-long learning. Nevertheless, the online learning process is found cannot reach its full potential until students practice what they learn. Mediocre courses theoretical contents could not assist students practice and learn effectively.

Allo (2020) and Nur Salina, Nor Mazlina, and Sharifah Wajihah Wafa (2020) also indicate that the students fully supported the online learning system as a tool to help them learn beyond the usual practice such as face to face in the classroom, but the problem is the accessibility of the internet. The problems include the availability of an internet network and the financial ability of some of the students who relied on internet data packages that they could not afford.

Methodology

This study has two phases of data collections. The first phase of this study was conducted to identify key themes of issues, challenges, and constraints that students are facing in their

online classes during the Covid-19 pandemic. Open-ended interview sessions were conducted with 21 postgraduate students at the Razak Faculty of Technology and Informatics (FTIR), Universiti Teknologi Malaysia. These are the students from the Informatics Department, who have information technology background. Themes are derived from the analysis of the results, which were then used as the basis to build a set of questionnaires that were distributed in the second phase of the study.

The questionnaires were developed using Google Form and were distributed to the lecturers from all programs in the Razak Faculty of Technology and Informatics (FTIR). There are 122 lecturer-population across various disciplines in the faculty which offers multi-disciplinary programs. This second phase of data collection are to determine the constraints of online teaching and learning from the perspectives of the lecturers. To identify the constraints, a statistical analysis is conducted to extract the information.

Results and Discussions

The analysis and findings from the qualitative method provide insights into the issues and challenges for online teaching and learning. Based on semi-structured interview with the students, they explained the issues and challenges they faced related to online process of teaching and learning. The thematic analysis found that the students faced five main challenges which consist of network and bandwidth limitation, less interaction, hard to learn for technical subjects, new normal for class interaction and stress.

The network and bandwidth limitation is the prime challenge for online teaching and learning. The key ideas and sub-themes emerged to form this theme are as summarized in Table 1.

Table 1: Key ideas and sub-themes for Network and Bandwidth Limitation

Theme	Sub-theme	Key Ideas
Network and Bandwidth Limitation	Network and Internet problem	• Network connection is unstable. Internet network may be interrupted or not stable. • Network issues at times. • The access to internet connection sometimes does not working properly.
	Interruption during real-time communication/ interaction	• The access to internet connection sometimes does not working properly. The connection interruption makes the student lost track on what the lecturer had shared. • Slow internet connectivity. Harder to communicate with group-members for any group projects. • Network is sometimes slow and its give impact when I start the online exam 10 minutes late because of my network.
	Data bandwidth limitation	• We have limited data broadband quota, it's quite costly.
	Required more data for software installation	• Required more data for software/tools installation that is used in the subjects taken; e.g: installation for Mac/Windows laptop.

The network and internet problem emerged due to unstable and poor connection during the online classes. When the network is intermittent, there will be lags during the lecture session and it is difficult for the students to get good quality of the lesson. The network interruption during synchronous mode (real-time communication) makes the student lost track on what the lecturer had shared. Although the interruption took only in a few seconds but when it happened frequently, the students found it difficult to concentrate and to stay focused. Furthermore, the slow internet connectivity limits the communication between the group members during a collaborative task and group assignments. Due to bandwidth limitation, it also gives financial impact when students need to purchase extra data due to the limited quota of data broadband particularly when they need to attend for real-time streaming or required to download huge files of videos and interactive lessons. It became more challenging when they need to download and install software or during the examination hours. As one of the student mentioned *"Network is sometimes slow and it gives impact when I started the online exam 10 minutes late"* and in another case, the student need to rent a hotel room to ensure the stability of internet network during examination weeks.

The second challenge identified is less interaction and communication. The key ideas and sub-themes emerged to form this theme are as summarized in Table 2.

Table 2: Key ideas and sub-theme for Less Interaction and Communication

Theme	Sub-theme	Key Ideas
Less Interaction and Communication	Limited interaction	• Lesser interaction with classmates and lecturers. • Harder to communicate with group-members for any group projects. • Difficult to get a free time to meet lecturers. • Limitation in terms of social interaction between peers – difficult to find the same free time after class hours. • Lack of two-way interaction within lecturer and student
	Only rely on digital platform for teaching and explanation	• Nothing like using a whiteboard to draw and explain certain things. • No personal guidance by looking at the codes we type and correcting it. • Communication with the lecturer became weak as I am a conventional type of student who prefer to ask one to one physically until I gain the understanding of the lesson.
	Challenging groupwork without face to face interaction	• Challenging to do group work with classmates with just over the calls. • Challenging in communicating with classmates for group assignment/project without face to face.

By only relying on digital platform, telephone calls and without face to face interaction, there are limited communication and lack of two-way communication between the students and the lecturer and among them. Even though the synchronous mode opens for two-way communication but without clear self-expressions, gestures and a few seconds of lagging during the interaction reduced the quality of communication. Besides, it is difficult to find the same availability of time to meet the lecturer after office hours. The same difficulty occurs for group work that makes the collaborative activities becomes harder to be done due to limited and lesser communication between the group-members as mentioned in the excerpt *"limitation in term of social interaction between peers – difficult to find same free time after class hours"* and *"it is challenging to do the collaborative activities with classmates with just over the phone calls"*. On the other hand, by only relying on digital platform, it limits the way to describe and explain things during the online sessions. It is not the same as using a whiteboard when explaining certain things and there were no personal guidelines during the class activities. For introvert and conventional students, the communication became weaker since they are not proactively responding through the digital platform.

The third challenge emerged when the students found the conventional style of learning is not suitable for digital platform. The key ideas and sub-themes emerged to form this theme are as summarized in Table 3.

Table 3: Key ideas and sub-theme for Unfit Conventional Style of Learning via Digital Platform.

Theme	Sub-theme	Key Ideas
Unfit Conventional Style of Learning via Digital Platform	Lagging and noise during conventional interaction of Question and Answer sessions	• Asking question during online class is a bit challenging because sometimes it can prolong the duration of the class and students will lose focus. • Some participants forgot to mute themselves and sometimes it causes unwanted noise during the online class. • Quiz via Kahoot (the fastest is the winner) is not fair for the students with network problem. • Encouraging students' participation by giving extra marks for those can answer fast is not suitable for matured students because they need time to think thoroughly before answering and sometimes not well-verse with online tools. • Online learning makes me feel low-confident to ask the question from the lecturer. As I am one of the senior students, I don't like to rush. Maybe this is my weakness and I will probably loose marks.
	Less quality of learning	• We can't get the quality that the lecturers want as they don't know our level of understanding of that particular subject because they have to entertain many students.
	Needs to re-skills for self-learning	• Need to study and explore on my own. • Lack of time management.

The normal interactive sessions in which the students could easily ask questions during lecture hours is quite challenging through the digital platform. Frequent interactive sessions during the lecture hours could cause other students to lose focus and prolong the class duration. There were also times when some participants forgot to mute themselves causing unwanted noises and interrupted the class session. In other cases, the students found that interactive online quizzes that are based on first come first serve concept such as Kahoot and fastest answer during the online classes were not fair for grading. This is due to their reliance of the internet connection and is not suitable for adult learners in which they need time to think for answers thoroughly as mentioned in excerpt *"online learning makes me feel low-confident to ask questions from the lecturer. As I am one*

of the senior students, I don't like to rush. Maybe this is my weakness and I will probably lose marks". The students felt that they obtained less quality of learning due to lack of personal attention during the lesson and that the lecturer generalizes the teaching and learning session without realizing each particular of student's condition. On the other hand, the current students are facing lack of self-learning skills. Normally, when the students need to explore and study independently, they need to have at least the basic skills of self-learning so they can explore the subject on their own. Furthermore, due to study at home condition, the students need to have a proper time management in balancing their time with tasks, assignments and personal activities throughout the day.

Fourthly, it is hard to learn the technical subjects through online platform. The key ideas and sub-themes emerged to form this theme are as summarized in Table 4.

Table 4: Key ideas and sub-theme for Hard to Learn for Technical Subject.

Theme	Sub-theme	Key Ideas
Hard to Learn for Technical Subject	Requires hands-on	• Hard to understand certain subjects, especially for the subject that requires hands-on practice such as coding. • Technical subjects are best to be taught face to face for students to have better understanding. • Difficulty to follow for hands-on/technical subject but the lecturer is available after class/fast response when we have questions to ask/need clarification. • More comfort to have face to face sessions for technical subjects as I do not have any background in IT.
	Data bandwidth limitation Hard for Technical Subject - requires hands-on	• In terms of software/tools used in the subjects; e.g: installation for Mac/Windows laptop 14. We have limited data broadband quota, it's quite costly.

It is challenging when teaching and learning involves technical subjects that require hands on or practical skills as stated in excerpt *"it is hard to understand certain subjects, especially for the subject that requires hands-on practice such as coding".* Certain students implicated that this kind of subjects are best to be taught through face to face approach for students to have better understanding. For master classes, generally the technical subjects are delivered by assuming the students already have basic knowledge on it and taught at an intermediate level. Thus, it became difficult for the students who has no background for these subjects. Moreover, the technical subjects require software installation and settings which at times is difficult to be configured on their own.

Finally, the students also emphasized on the feeling of depression and stress to study at home. The key ideas and sub-themes emerged to form this theme are as summarized in Table 5.

Table 5: Key ideas to and corresponding sub-theme for stress challenge.

Theme	Sub-theme	Key Ideas
Stress	Study-Personal-Home responsibilities at the same time and place	• Had other responsibilities as well as coping with the new situation of home quarantine. It made me feel stressed out as I had difficulties in managing my time. • Having online learning sessions at home with four kids is very challenging.
	Exhausted for long class	• Duration of the class is too long; it will make us feel exhausted.

Since this is a master program, most of the students are adult learners. They have other responsibilities to do their job, as well as family and personal matters. Hence, it is difficult for them to focus to study at home due to work, personal and house chores at the same time. One of the students mentioned *"having online learning sessions at home with four kids is very challenging".* As the master program is based on a modular structure, each of the course within the program are divided into four to six times of meetings. The standard timeline for each meeting consists of eight hours a day, which usually conducted from 8.00 a.m. to 5.00 p.m. Hence, the students were exhausted for the long hours' on-screen classes as one of the excerpts mentioned; *"duration of the class is too long, it will make us feel exhausted".*

Based on the five main challenges identified from the qualitative analysis, the survey has been distributed to identify the lecturers' perception towards these challenges. Most of the lecturers who responded have been in service for more than 20 years, longest being 40 years. The results from this survey are as stated in Figure 1.
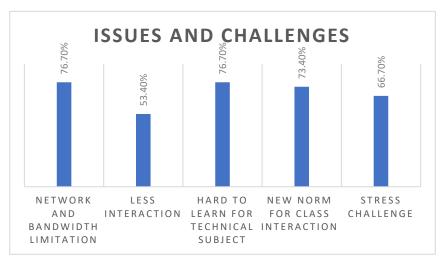

Figure 1: Issues and challenges from the lecturers' perspective

The results from the surveys has shown that most of the lecturers agreed most on the challenges of network and bandwidth limitation and hard to learn for technical subjects which comprise of 76.7% of the total number of the lecturers. Probably, they faced the same issues with their own internet access or poor internet connection due to certain locations of their homes. For lecturers teaching technical subjects, they agreed that they faced difficulties in

teaching as these subjects are about skills that require hands-on teaching for better understanding for the students. At the same time, they might need specific software or tools that could cater with the subjects and that certainly require more effort and time as they might have to entertain the students for long hours especially during question and answer sessions. A total of 73.4% lecturers agreed on the challenge of new norm for class interaction. As teaching and learning involves continuous interactive communication, the digital platform does raise the question of the effectiveness of such approach.

The next challenge refers to stress which comprises 66.7% lecturers agreeing with the students. Although some of the students might face with low level of self-confidence when interacting online, lecturers might face difficulties such as repetition of lessons due to poor connection, students' attendance issues and others. Additionally, lecturers expressed the challenges in acquiring new skills to conduct online classes, which include the preparation of learning material and learning to use the digital tools. Finally, half or 53.4% of the lecturers agreed on the challenge of less interaction with the students. As physical classes are handled at the same place, the location of the lecturers' room or office has made it easier for the students to meet or communicate with the them. Besides, communicating through the digital platform is sometimes difficult due to poor connection of the internet or clash of available times from the students or the lecturers. Interesting to highlight a common problem both faced by students and lecturers who are more senior in age finding it a handicap having to struggle with the fast pace and digital skills of the new norm.

Conclusions

The sudden change in how education is delivered due to Covid19 Pandemic has impacted both students and lecturers in many ways. Adaptation and changes are unavoidable in the 'new normal'. Abiding by the Ministry of Education's recommendation to move educational activities to a virtual teaching model using the existing institutional software and available public digital platforms, has its issues and challenges. It is identified from the study that students faced five main challenges, namely related to network and bandwidth limitation, less interaction, hard to learn for technical subjects, new normal for class interaction and stress. These findings seem to agree with those identified in the literature, which include challenges related to accessibility, and learning pedagogy.

The findings also show that the lecturers too faced the same problems when conducting classes through the digital platform. Top three most challenging issues for lecturers are related to accessibility of network and bandwidth, teaching and learning of technical courses, and adapting to new normal class interactions.

Hence, it is essential to find ways to improve the quality of the new normal of teaching and learning. The information derived from the study will contribute to the future planning and strategizing of online classes. With the information and benchmarking of better teaching and learning practices for the 21st century learners, the lecturers can choose effective tools, techniques, and innovative approaches for student-centred learning, whilst the university management will be able to provide a conducive platform for the new norm learning environment.

Adapting and integrating various teaching and learning approaches into online learning can facilitate effective and efficient online teaching and learning practices. Pedagogical and technical competency of online educators is important. Additionally, it is important to provide more flexibility and to encourage self-regulation in learning. This will hopefully lead to the facilitation of life-long learning where students can learn anytime and anywhere.

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