

SURVEY ON CHALLENGES OF ONLINE TEACHING AND LEARNING FOR INTERACTIVE MULTIMEDIA SUBJECT DURING COVID-19 PANDEMIC

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Abstract: *The unprecedented global pandemic had really impacted all aspects of life including education. Online teaching and learning which used to be the alternative method has been quickly deployed due to schools and universities being closed. As a result, many problems emerged such as technological and emotional well-being issues. This paper addresses the technological issue by conducting a survey among 48 UiTM students enrolled in Diploma Hotel and Tourist Management who take Interactive Multimedia subject. The survey explores the perceptions of students regarding software installation and usage issues. The students' concerns include difficulty to install software and device does not support the software. The instructor's view was also obtained and the possible remedies to the challenges are also presented.*

Keywords: challenge, multimedia, online learning, technological issue

Introduction

When the global pandemic struck in 2020, the education field was severely affected and all institutions resorted to online distance learning. This has caused various challenges, especially for laboratory or practical-based subjects. Among key challenges discovered are: information overload, and confusion that would overwhelm the learners (Alzahrani et al., 2020). The contrast between conventional face-to-face learning and online learning especially poses a challenge to higher education institutions to present with a new course design and pedagogical implementation (Redmond et al., 2018). The lack of interactivity in online learning due to insufficient social presence and interaction will lessen the motivation and satisfaction of learners in time (Bali et al., 2018).

Instead of having a face-to-face session in the laboratory, students have to install alternative software on their own devices. Students of Universiti Teknologi MARA (UiTM) have also been involved in this situation for more than one year. Interactive Multimedia is a servicing subject offered to Faculty of Hotel and Tourism Management Diploma students. Even though the subject can still be conducted online, technological issue in terms of software installation difficulty and unsupported devices are of concern to the students. This study explores the challenges and issues faced by the students and instructor during online teaching and learning.

This paper is divided into five sections. This section presents the overview, the next section highlights the related works. The third section presents the methodology used and the fourth section shows and discusses the results. The final section concludes the paper.

Literature Review

Online teaching and learning definitely have its challenges, and that led to many studies about it especially since the global pandemic started.

One research studied the challenges of online learning during the height of the pandemic with which they managed to identify six major challenges through a survey that was done to 20 faculty members of educators from Business, Accounting and Information Technology department. The teachers applied two methods of teaching that is either synchronous or asynchronous learning. The main challenges that were recognized include students' lack of focus in learning, inadequate platform available to utilize, students were unprepared with learning tools, the access of internet was not up to par where teachers had to sacrifice their teaching time, poor connection of the internet causing interference during learning time and student skipping class (Yusuf et al., 2020).

The pandemic situation changes multiple spectrums of life as it affects differently through social life, public health, economics and notably education. Eight challenges of online learning motivation that arise during the pandemic that affect the education sector were identified in (Chiu et al., 2021). The importance of taking part and maintaining both student and teacher motivation during the transition to online learning should not be disregarded. The students must equip themselves with the ability to cope with self-directed and collaborative learning as technology-infused learning environment arrives. Recognizing the psychological needs of students in crafting online learning system is important. Encouraging a technology-supported peer mutual collaboration surroundings is also important and bridging the gap between the theoretical and practice application in learning would be beneficial. Supporting the teacher's wellbeing is essential as the teacher is the one who handles the day-to-day learning process. Technology application for online learning on the minority group such as students with special education needs and living far away from the city needs to improve. Studies are needed to reinvestigate the impact of pandemic on education policy in Asian countries (Chiu et al., 2021). Meanwhile (Ferri et al., 2020) identified the key obstacles that affect the use of online learning that is categorized into technological, pedagogical and social terms. The technological challenge focuses on the access to infrastructure. The pedagogical challenge looks into the demand for interactive multimedia teaching material that will motivate and engage students' motivation, the need for technology training for teachers that lack skills and the insufficient feedback and evaluation system of the student. The social challenge concentrates on the scarcity of conducive home learning environment and support from parents (Ferri et al., 2020).

(Simamora et al., 2020) conducted a study by collecting data from 15 students that had taken the course Fundamentals of Education 1. The response provided shows the challenges faced

that could affect students' motivation and self-expectations as online learning would require students to record, read, memorize and be able to access online-based learning material. The economic situation of a household during the pandemic period does not help improve the condition for online learning as most of the families could not afford to buy internet quota for their child to access the online learning media. The capability of the device to support the online learning material is also an issue as there were complaints regarding the support issue. This would surely hamper the process of online learning. Anxiety issues also arise in fear of the pandemic situation. The cause for anxiety could be because most online classes' assignments or homework were given at the same time. The situation frustrated student and made them feel bored thus affecting physical and psychological conditions (Simamora et al., 2020).

A study was done by (Chung et al., 2020) through a questionnaire given to students who enrolled in two online courses in UiTM. The online questionnaire was answered by a total of 399 undergraduate (Degree and Diploma) students. The analyzed results show that the most common challenge faced during online and distance learning (ODL) is the internet connectivity issue. The abundance of different online learning methods used by different lecturers is also a challenge that most students faced during the pandemic. Inconducive learning surroundings also catalyze to decrease student motivation in addition to the absence of face-to-face sessions with friends and lecturers. It also contributes to the difficulties that students experience in understanding the content of a subject. Lack of technical skills to navigate through multiple apps and software for online learning sessions is one of the challenges in online learning process (Chung et al., 2020).

Reference (Adedoyin et al., 2020) pointed out six main challenges faced during online classes: technology, socio-economic factor, human and pets' intrusions, digital competence, assessment and supervision and heavy workload. The dependency of online learning on current technology devices and the internet can make students and instructors become more vulnerable to inaccessibility to online learning and is viewed as a big challenge for institutions, faculty and learners themselves. Outdated devices can become a problem as it interrupts the flow of online learning. The inequality in the socio-economics status of students where some heavily rely on the computer and free access to internet at school will be a setback to the migration process and surely slow down the adoption toward online learning.

One survey was administered to College of Education students at the University of Science and Technology Nueva Ecija during the first semester of the academic year 2020-2021. The purpose of the study was to ascertain the respondent profiles and problems in online learning encountered by students during the Coronavirus Disease (COVID-19) pandemic. 212 students completed a questionnaire by providing information about their profile factors and the problems encountered during the COVID-19 Pandemic. The identified barriers included slow internet connectivity, using data only, the gadget used, noisy environment/surroundings/distraction, financial/budget considerations, technical issues, a lack of in-person interaction, understanding course expectations, time management, and staying motivated, as well as uncertainty about the future. Noise/environmental interference, technical concerns, and slow internet connection were the most common issues faced by students (Cabual et al., 2022).

The COVID-19 pandemic resulted in school cancellations and social isolation, posing both academic and emotional difficulties for adolescents. Schools worked diligently to shift lessons online but paid less attention to students' cognitive and emotional readiness to learn well in a virtual environment. Structural equation modelling was used to examine the relationships

between online learning preparation, emotional competence, and online academic performance during the COVID-19 pandemic. The findings suggest that being prepared to study online and having strong emotional competence might help teenagers be more resilient to COVID-19-related obstacles and learn more efficiently online (Wang et al., 2022).

The purpose of study by (Almaiah et al., 2020) is to identify major difficulties confronting present e-learning systems and to determine the primary elements that encourage the use of e-learning systems during the COVID-19 pandemic. The interview approach was used in this study, utilizing thematic analysis through the NVivo software. Thirty students and thirty-one specialists in e-learning systems from six institutions in Jordan and Saudi Arabia participated in the interview. The identified critical factors affecting e-learning system usage and whether universities should incorporate them into future plans are as follows: (1) technological factors, (2) e-learning system quality factors, (3) cultural aspects, (4) self-efficacy factors, and (5) trust factors. The findings also suggested that there are three major impediments to e-learning system usage: (1) change management concerns, (2) technical issues with e-learning systems, and (3) financial support issues.

The value of online learning and the Strengths, Weaknesses, Opportunities, & Challenges (SWOC) analysis of e-learning modes during a crisis was also discussed in (Dhawan et al., 2020). Additionally, the study sheds light on the emergence of EdTech companies during pandemics and natural catastrophes and makes recommendations to academic institutions on how to address the issues connected with online learning. A case study conducted at a New Zealand institution that was badly impacted by earthquake activity discovered that following the bad occurrence, the college became more resistive to online learning. Technology assists individuals in overcoming barriers during these challenging circumstances. However, they assert that a solid IT infrastructure is a precondition for online education. Institutions and organisations should develop contingency plans in case of epidemics or natural catastrophes (Dhawan et al., 2020).

(Mahyoob et al., 2020) focuses on students from English Language Learner (EFL) in Science and Arts College where a survey-based questionnaire was given to 184 students and with one of the main objectives was to identify the challenges during online learning by analyzing the feedback from the student. The research resulted with highlighting the challenges and obstacles experienced during online English learning classes with the glaring challenge that students encountered was the issue with the internet speed where 48% of the respondents experience it. While the second-highest response was that there were no problems experienced at all with 18% of the total student. Students who have problems with accessing online materials and download, the online examination process and the lack of laboratory sessions contribute to 14%, 13% and 8% respectively. There was also an issue with lack of digital skills using the Blackboard platforms offered by the university (Mahyoob et al., 2020).

A web-based survey was distributed to 92 students of English as Foreign Language class which resulted in 45 answers from participants with four of them were followed up for further semi-structured interview sessions. The data shows that the challenge the students face is also mainly related to the availability of internet connection signal where some even experience electricity blackout. This happened to students who live in the remote part of the town. The lack of efficient direct interaction between students and teachers has also led to less understanding of the subject taken with some even suggested that it could affect their real-life success. Students' commitment to learning also becomes a hindering factor during online learning as it makes

them lazier with the little control and guidance that comes from the teacher and distracts them from doing the given assignment (Nartiningrum et al., 2020).

Many types of research that studied the challenges of online learning focused on the students' points of views. This paper also takes into account the instructor's view and identifies possible solutions to overcome the challenges.

Methodology

An online survey was conducted using the Google Form platform among 71 students of Diploma in Tourist Management, UiTM Terengganu who take Interactive Multimedia subject during September 2021 – February 2022 semester. 48 students cooperated and responded to the survey. Interactive Multimedia is categorized as servicing subject as it does not cover the core content of the Diploma in Tourist Management course. The main topics with their designated software are shown in Table 1.

Table 1: Subject Topics and Designated Software

Topic	Software
Text and Graphics	Adobe Photoshop
Sound / Audio	Adobe Audition
Video	Adobe Premiere Pro
Animation	Adobe Animate
Authoring	Adobe Dreamweaver

The questions asked are depicted in Table 2.

Table 2: Survey Questions

No.	Question	Options of answers
1	Please rate yourself in term of ICT skills proficiency.	Novice Advanced beginner Competent Proficient Expert
2	Have you installed any of the following software on your device? You can tick more than ONE.	Adobe Photoshop Adobe Audition Adobe Premiere Pro Adobe Animate Adobe Dreamweaver
3	Please state the reason why you are unable to install Adobe Photoshop/Audition/Premiere Pro/Animate/Dreamweaver? Leave it blank if not applicable.	Open-ended.
4	If you are unable to install Adobe Photoshop/Audition/Premiere Pro/Animate/Dreamweaver, have you installed any similar /alternative software? If yes, please state the software, if not, leave it blank.	Open-ended.
5	Which study mode do you prefer for learning this course?	Face to face Fully ODL Hybrid

6	State the reason for your preference of study mode.	Open-ended.
7	Suggestion to address the problem of installing software as stated before or to improve the learning process of this course.	Open-ended.

Question 1 was asked to get a basic idea of the students' existing Information Technology (IT) technical background skills because they are not majoring in IT course. The reason for question 2 is that, due to online learning, the students have to install the software in their own devices. Since device with high specification is required for multimedia software, alternatives are allowed. Questions 3-4 explore this issue to determine the problems they encounter and actions taken to overcome it. However, some of the alternative software could not do certain tasks which are essential for students to learn. Questions 5-7 aim to figure out their perceptions about different study modes and their expectations for future improvement.

Results and Discussions

This section shows and discusses the survey findings as well as outlining the instructor's views.

Students' Responses

Figure 1 shows the respondent's rating of their ICT skills proficiency. More than half actually feel that they are at advanced beginner level. About 27% rate themselves as competent, 14% consider themselves as expert and the rest perceive their level as proficient. As shown in the figure, less than 50% of the students can be considered as well-versed with IT skills. This is not surprising as they are not enrolled in science and technology related course.

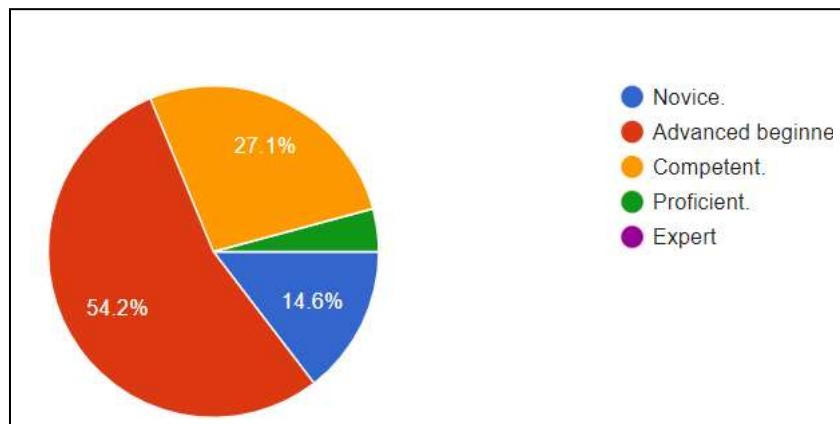


Figure 1: Respondents' perceptions of their ICT skills proficiency

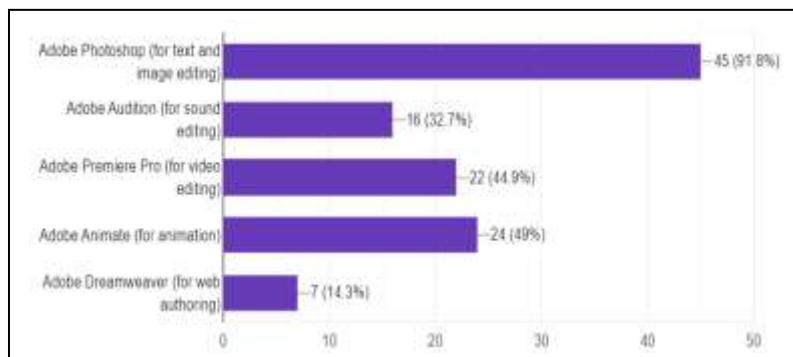


Figure 2: Responses for installed software

Figure 2 indicates that only Adobe Photoshop was installed by most of the students. Almost half of the students managed to install Adobe Animate and Adobe Premiere Pro. While only 32.7% installed Adobe Audition and 14.3% installed Adobe Dreamweaver.

The reasons of the findings as shown in Figure 2 are depicted in Table 2.

Table 3: Reasons for not installing and Software alternatives

Software	Reasons	Alternative
Adobe Photoshop	Not enough memory storage. Device does not support. Expensive. Already has other software installed.	Photopea, GIMP, Lightroom, Picsart, Flyer Maker
Adobe Audition	Device's operating system does not support. Does not know how to use it. Not enough memory storage. Device does not support. Software is not free. Does not think the software is necessary.	Audacity, Super Sound
Adobe Premiere Pro	Software is not free. Not enough memory storage. Device does not support. Does not know how to use it.	CapCut, Kinemaster, Alight Motion, Filmora
Adobe Animate	Software is not free. Not enough memory storage. Device does not support. Does not know how to use it. Does not think the software is necessary.	Wix
Adobe Dreamweaver	Software is not free. Not enough memory storage. Device does not support. Does not know how to use it. Does not think the software is necessary.	

Insufficient memory storage, inability of device to support the software and expensive price of software contribute the most to reasons of not able to install the designated software. Some respondents also claim that they do not know how to use the software and feel the software is unnecessary as reasons to not install the software. Difficulty to install the software is also one of the factors.

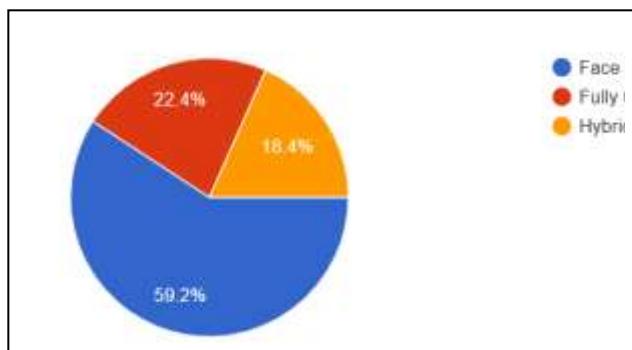


Figure 3: Responses for preferred study mode

As shown in Fig. 3, almost 60% of students opted for face to face as their preferred study mode. There are various reasons given especially difficulty in understanding the subject online especially the practical part. Some also find it hard to concentrate in online class. They believe that having face-to-face class allows them to feel more open to participate and interact compared to sitting in front of the screen. But most importantly, the ability to experience hands-on activity in computer lab that has been equipped with required software is the major reason why face-to-face option is selected. As mentioned in Table 2, there are various issues which hinder them from installing the software successfully.

However, 22.4% of students favored Fully ODL study mode. They reasoned that studying at home is more comfortable as they already get used to it now compared to when ODL was first implemented. Money saving is also of the reasons mentioned as well as their concern of rising number of COVID-19 cases. Besides they can access recorded lectures and other internet resources easily at their pace.

Considering the pros and cons of both study modes, 18.4% of students chose hybrid study mode. They agree that lectures and theoretical content can be conveyed through online method, while the hands-on and tutorial session should be done in person for better understanding.

Based on the suggestions, many students voiced their concern about not being able to install the designated software. They recommended that the choice of software should be more flexible and wished that they could attend the class in person soon. The students also suggested that if the class needs to be conducted online, the software should be given free.

Instructor's View

Responding to the students' perception obtained from the survey, the instructor actually agrees with some of the alternative software. For instance, most alternatives of image and video editing software work well. However, for some software, some features are not available which leads to unfulfilled objectives of the chapter. Animation and authoring software in particular are capable of incorporating scripting. But, the alternative tool such as Microsoft Powerpoint and Wix lack this feature.

It is also difficult for the instructor to maintain engagement and make the class exciting especially when not every student can turn on their camera. Synchronous class cannot be conducted for all students, therefore recorded video is essential for students who face internet connectivity problem and to avoid students becoming overwhelmed with digital interactions. Unfortunately, some students don't even watch the videos. The instructor has attempted to make things easy for students but the problem arises in determining which students are really having hard time and those who have attitude problem. Some students are also more reluctant and uncomfortable to ask online.

Some students also responded that the reason they don't install some software because they don't know how to use it. This is disputable as recorded tutorial has been given and the instructor is also ready to answer students' questions during online session and after the class.

Face to face method is definitely the most suitable and effective method but hybrid method is possibly the best solution for the time being. For more effective improvement, it is better to conduct the survey after the first test or middle of semester instead of at the end of semester.

Conclusions

With respect to multimedia related subject, devices with high specification are definitely essential for online teaching and learning. However, many students can't afford to have devices with the requirements that could support multimedia related software. Alternative software that are free and can fulfill the basic features similar to designated software are allowed. However, when it comes to more complex tasks such as scripting, the alternative software is unable to do so. Conducting classes in the institution computer laboratory itself is the best option but due to unpredictable situations, online mode is inevitable. Among possible ways to help the students are by providing software and device needed or adjusting the syllabus content during the online mode of teaching and learning. Instructor's perceptions can also be explored in further study.

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