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Identifying Students' Preference in Learning Through ODL (Open Distance Learning) for Multimedia Course

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ABSTRACT

Teaching and learning computer course for non-computer background novice learners using online mode in the midst of COVID-19 pandemic is very challenging. For students in higher education, computer courses like Interactive Multimedia are a crucial addition to their skill set, regardless of subject area. Students who complete this course will receive both practical resources on multimedia applications and theoretical concepts. This enables students to enhance their knowledge on such applications and apply it in their studies. This makes it possible for students to learn more about these applications and use it in their academic work. This study was carried out in order to determine the technical problems and challenges, the best methods for lectures, exercises, and reference materials, as well as the ideal platform for lectures delivered via Open Distance Learning (ODL). This study was conducted by the Department of Computer and Mathematical Sciences, Universiti Teknologi MARA Cawangan Pulau Pinang. An online survey via google form was created to collect data from 109 third semester Diploma in Tourism students from the Faculty of Hotel and Tourism Management. The findings will be used to enhance the online lectures teaching technique for CSC253 course in the upcoming semesters, increase students' understanding and interest in this subject along with improving students' grade. Results show that most of the students prefer live hands-on class by the lecturer as they can see clearly all the features and functions shown by the lecturer during the live class.

Keywords:
Open distance learning (ODL); COVID-19; Multimedia application

1. Introduction

The COVID-19 pandemic has had a profound impact on both our way of life and how we raise our children. But with modern technologies, everything appears to be functioning well. To ensure that the educational system functions properly, majority of educational institutions begin to use Open

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Distance Learning (ODL). In an effort to ensure that students can simply access all of the material, educators are trying to keep up with the times by expanding their expertise of the newest technology.

However, various challenges were discovered during the ODL program such as information overload, and confusion that would overwhelm the learners [3]. Other challenges on the education styles were recognized including students' lack of focus in learning, inadequate platform available to utilize, students were unprepared with learning tools, poor internet connection causing interference during learning time and student skipping class [15].

Adedoyin *et al.,* [1] identified six primary obstacles encountered in online learning environments. These include technological advancements, socioeconomic factors, human and pet intrusions, digital competency, evaluation and supervision, and a heavy workload. Some other problems have also been noted, including issues with internet connectivity, distractions around the house, and budgetary and financial concerns [11]. Since each of these difficulties may have an impact on the online learning process, preparation is required to address the problems [14].

Effective strategies are needed to convey all the materials and information for multimedia courses taken through Open Distance Learning (ODL) so that students may easily and clearly understand what they learn. Multimedia courses offer learners practical sessions utilising multimedia applications in addition to theoretical ideas. But in order for students to effectively acquire knowledge, it is crucial to determine the most effective method for delivering all of this material to them through online instruction.

Interactive Multimedia (CSC253) is an elective course offered to Diploma students in University Technology MARA. The topics covered in CSC253 include the fundamental concepts in multimedia, basic multimedia elements such as text, graphics, audio, video, and animation, requirements of multimedia project development, computer hardware and software, current multimedia authoring tools, file formats, media storage and memory management as well as applications of multimedia for the Internet. All these topics will be covered in lecture classes while for the lab session, hands-on experience on software usage for graphic and video editing will be guided during the laboratory sessions.

The course's learning materials can be made available in a variety of formats and with different technologies. In addition to using Google Meet or Ms Teams for in-person classes and lecture slides, videos were created and uploaded on YouTube so that students could watch them whenever they wanted or in their free time. During lab sessions, files from Google Drive, Microsoft Teams, YouTube, and other learning management systems (LMS) can be exchanged, as well as softcopies of the lab modules and interactive videos. In addition to uploading files or videos, live courses can be a useful way to show students all the features of the multimedia programme because they will be able to ask questions, participate, and receive direct.

2. Literature Review

At the turn of the year of 2020, the emergence of the COVID-19 pandemic in Malaysia required the implementation of a movement control order (MCO) by the Malaysian government. This measure demanded that all Malaysian citizens remain confined to their residences, with the primary objective of mitigating the rapid transmission of the virus. The ongoing global pandemic has significantly impeded several industries and has had a profound impact on various facets of daily life, including the realm of higher education. Nevertheless, the implementation of the Open Distance Learning (ODL) method persisted in all educational endeavours.

In a study conducted by Cai *et al.,* [2] the phrase "online distance learning" is identified as a multifaceted concept encompassing various synonymous terms such as e-learning, blended learning,

online learning, and virtual learning. This educational approach involves the utilization of Internet tools for learning activities, with a notable absence or minimal presence of face-to-face interaction with instructors. Additionally, it was stated that Open and Distance Learning (ODL) use several methods to deliver course information, such as teleconferencing, online chatting or forum, interactive video, as well as recorded video and audio. In addition to the Learning Management System (LMS) implemented by specific higher education institutions to facilitate the learning process for students and instructors, various freely available platforms can also be utilized. These include Google Classroom, Microsoft Teams, as well as social media applications like WhatsApp, Telegram, and YouTube, as highlighted by Chung *et al.,* [6] in their research.

The internet and technological devices are essential to online learning. One major challenge facing educational institutions, staff, and students is the dependence of online education on technological equipment. A study by Adedoyin and Soykan [1] found that many students who live in underserved and rural areas have trouble meeting the technical requirements of online learning because they have limited access to dependable, high-speed internet services and antiquated technology. Moreover, a significant amount of online educational resources is not readily available or accessible to students using smartphones as their primary internet-accessing device, which makes it difficult for them to fully benefit from online learning [2].

Chiu *et al.,* [4] have identified a set of eight challenges pertaining to motivation in online learning that have emerged during the pandemic and have implications for the education sector. These challenges encompass issues such as the impact on students' and teachers' motivation during the transition to online learning, students' preparedness for engaging in online learning, as well as the knowledge of instructors and students regarding online learning tools. Additionally, the challenges also encompass concerns related to internet accessibility and the technological resources employed in the online learning environment. In their study, Ferri *et al.,* [8] examined the primary barriers that impede the adoption of online learning. They found that the technological issue lies in ensuring adequate access to infrastructure and providing sufficient technology training for both educators and students.

In addition to addressing the issue of technical gadgets and Internet access among students, it is imperative to acknowledge the fear experienced by students when participating in Open and Distance Learning (ODL) activities. Prior to strategizing for Open and Distance Learning (ODL) activities and selecting an appropriate platform for conducting online classes, educators must conduct an inquiry into many factors. These factors include the availability and quality of Internet connectivity, the technical equipment possessed by students, their proficiency in using software applications, and their capacity for self-directed learning. In addition, it is imperative for educators to take into consideration the motivation levels of their students in order to ensure their commitment to academic pursuits, particularly in the face of disruptions and challenges encountered within their home environments, as highlighted by Allam *et al.,* [2]. The aforementioned challenges arise from an unfavourable learning environment, characterized by the presence of family members within the household, limited space for revision and course assessments, as well as technical difficulties such as computer malfunctions, restricted Internet data, and the sharing of a single device among family members for work-related purposes.

According to Allam *et al.,* [2], a significant worry related to online learning is the absence of effective engagement with teachers. Online learning platforms, such as Microsoft Teams, Google Meet, Zoom, and Cisco Webex, necessitate students to possess computer literacy skills in order to effectively utilize camera and microphone devices for engagement purposes. In addition to possessing the requisite skills for active engagement in online discourse, it is essential for the student to demonstrate an understanding of proper etiquette for virtual meetings. Furthermore, proficiency

in accessing lecture materials, as well as the ability to download and upload evaluations, is crucial for facilitating self-directed learning. It was anticipated that the attention, inspiration, and assistance provided by lecturers through regular interaction would enhance the readiness level of students. The lecturer's initiative would indirectly enhance students' interest in the course, improve their performance, and increase their willingness to actively participate in the Open and Distance Learning (ODL) sessions throughout the semester.

In addition to its traditional format, ODL might encompass the utilization of online communication, wherein participants engage in online discussions and pose inquiries [10]. Proficiency in utilizing a diverse range of computer tools is essential for effectively accessing information and facilitating online learning. Hence, the preparedness of students holds considerable importance in ensuring their comprehensive readiness throughout the process of Open and Distance Learning (ODL).

To acquire proficiency in multimedia applications using online means, several strategies can be employed. These include the dissemination of digital copies of laboratory modules, conducting live classes via suitable platforms, and facilitating the provision and consumption of interactive movies pertaining to said applications. In order to foster interactive communication during live class sessions, learners should be afforded the chance to both pose inquiries and respond to queries posed by instructors, drawing upon the material covered in the course of the live class. According to John, Raquel, Mary, Peter, Poh, Inga, Masters, So-Young, Rakesh, Kalyani, Alexandra, and Martin [9], the use of this approach can facilitate active learning and enhance students' level of participation. Nevertheless, online laboratory modules might serve as an advantageous resource for students, enabling them to engage in revision by utilizing these modules subsequent to the conclusion of live classes.

In addition to live class and lab modules, films can serve as a potent multimedia tool, offering significant educational content and facilitating the creation of interactive materials, particularly in the context of virtual classrooms. According to Othman, Kadar, Umar, and Ahmad [12] the utilization of interactive and comprehensive videos has the potential to impact students' learning trajectory and their ability to retain information. This approach facilitates enhanced comprehension and efficient learning for pupils, since it has the potential to captivate their attention with engaging and intriguing content. Creating instructional videos utilizing various software tools like Canva, Powtoon, Kapwing, Clipchamp, and Screencast-O-Matic, and disseminating them through Learning Management Systems (LMS), Massive Open Online Courses (MOOCs), or YouTube can effectively facilitate students' access to educational resources.

Laboratory work is a crucial aspect of learning in various domains of knowledge [13]. In this particular domain, students are required to dedicate a significant portion of their learning time towards the resolution of practical problems and the simulation of experiential scenarios. Engaging students in interactive learning activities that involve hands-on exercises can serve as a catalyst for enhanced motivation and effectiveness in the learning process. According to Ekmekci and Gulacar [7] as well as Chu and Fang [5], virtual laboratories and simulations have been identified as effective tools for providing hands-on learning experiences and practical resources. These tools have the potential to enhance student enthusiasm and engagement in online learning, particularly in the context of problem-solving activities. Additionally, they can contribute to a reduction in workload and facilitate the overall learning process.

3. Methodology

CSC253 course is offered by the Faculty of Computer and Mathematical Sciences, Universiti

Teknologi MARA (UiTM) to all students in several programmes. The name for this course is Interactive Multimedia and in UiTM Cawangan Pulau Pinang, this course is non-prerequisite course and is being offered to the third semester Diploma in Tourism students from the Faculty of Hotel and Tourism Management. The teaching method for CSC253 is through lecture where students will learn the theoretical part and practical session in the laboratory. This paper was done to discover the appropriate ODL delivery methods for lecture and practical session which are effective and favoured by students. This study is hoped to help instructors to improve their teaching methods, increase students' interest and understanding on the course which can led to increment of the students' grade in the future semesters.

3.1 Participant

The participants were third semester undergraduate Tourism students from the Faculty of Hotel and Tourism Management, Universiti Teknologi MARA Cawangan Pulau Pinang who have enrolled in CSC253 or Interactive Multimedia course in semester September-January 2022. A simple online survey was distributed to 109 students using Google form, and all questions were successfully responded. A set of questionnaires which comprises of 27 questions separated into three main sections:

i. Section 1: Respondents' profile and basic information on CSC253
ii. Section 2: Lecture Teaching Methods
iii. Section 3: Laboratory Teaching Methods were developed as an instrument of this study.

Section 1 consists of information on the respondent's background, the devices they used, the technical issue encountered (if any), the preferred platform for ODL and questions related to CSC253 lectures and lab session. Section B include students' opinion on favoured teaching approaches and tools, exercises and lecture notes used during class lecture while Section C discovered the students' preference on instructional methods and exercises during practical session.

3.2 Instrument and Procedure

Likert Scale has been chosen as the method to identify the students based on the statement below besides the demographic information,

3.2.1 Section 2

i. Statement 1: I prefer lectures to be done live.
ii. Statement 2: I prefer reading notes from slides.
iii. Statement 3: I prefer watching interactive videos.
iv. Statement 4: I prefer listening to voice notes.
v. Statement 5: I prefer notes to be shared in WhatsApp/Telegram compared to another platform.
vi. Statement 6: I prefer lecturer to give exercises on each topic.
vii. Statement 7: Playing games such as Kahoot during each class session can help me to understand better on each topic.

3.2.2 Section 3

i. Statement 1: I prefer referring to modules when learning the software/applications.
ii. Statement 2: I prefer watching videos on how to use the software/applications.
iii. Statement 3: I prefer lecturer to show the usage of software/applications during live class.
iv. Statement 4: I prefer lecturer to provide exercises on the software/application so that I can
    - have an experience using it.
v. Statement 5: The lab exercises given to me helps me to understand better when using the
    - software/applications.
vi. Statement 6: The lab exercises given to me build more confidents when I am using the
    - software/applications.
vii. Statement 7: The lab exercises given to me help me to be more creative.

Reliability Cronbach's Alpha for the Section 2 (Student's preference on delivering the lecture notes) and Section 3 (Student's preference on delivering the type of hands-on materials during lab session) are 0.896 and 0.921 respectively.

4. Result and Discussion

An online survey using Google Form has been done to identify the student's demographic information as below:

Table 1
Respondent Demographic Distribution

No	Category	Percentage %
1.	Gender	
	a) Male	17.4
	b) Female	82.6
2.	Places stay during ODL	
	a) House	95.4
	b) UiTM College	1.8
	c) Rent house	1.8
	d) Friend's house	0.9
3.	Medium used during ODL	
	a) Laptop	87.2
	b) Desktop	1.8
	c) Tablet	0.9
	d) Smartphone	96.3
4.	Platform used during ODL	
	a) MS Teams	54.1
	b) Google Classroom	90.8
	c) ufuture	45.9
	d) WhatsApp	82.6
	e) Telegram	37.6
	f) Google Meet	4.6
	g) YouTube	25.6

The findings are represented in both visual and numerical forms. In Figure 1, from the feedback of 109 respondents on technical issues during ODL, 42.9% of the students experienced slow internet

connection, 27.5% of them faced coverage problem while 20.6% did not have enough mobile data. Only 9% of the students did not face any technical issue during ODL.

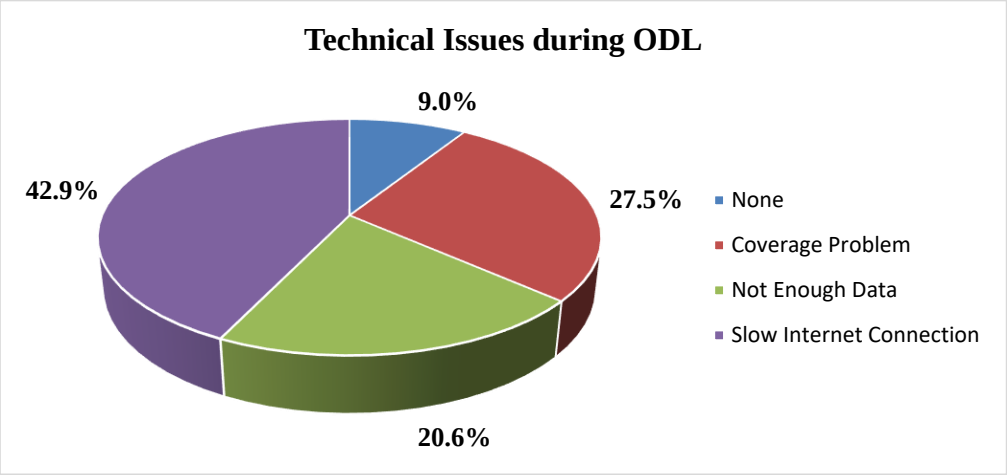

Fig. 1. Technical Issues during Open Distance Learning (ODL)

Table 2 below shows the result on students' preference in delivering lecture notes based on the Likert Scale.

Table 2
Students' preference on delivering lecture notes

Statements	Disagree	Agree	Totally Agree	Strongly Agree
I prefer lectures to be done live	5	15	40	49
	4.6%	13.8%	36.7%	45.0%
I prefer reading notes from slides	7	23	33	46
	6.4%	21.1%	30.3%	42.2%
I prefer watching interactive videos	7	31	36	35
	6.4%	28.4%	33.0%	32.1%
I prefer listening to voice notes	34	37	26	12
	31.2%	33.9%	23.9%	11.0%
I prefer notes to be shared in WhatsApp/Telegram compared to another platform.	19	13	32	45
	17.4%	11.9%	29.4%	41.3%
I prefer lecturer to give exercises on each topic.	6	41	32	30
	5.5%	37.6%	29.4%	27.5%
Playing games such as Kahoot during each class session can help me to understand better on each topic.	12	10	25	62
	11.0%	9.2%	22.9%	56.9%

Students preferred their lectures to be conducted live using platforms like Microsoft Team Meet or Google Meet because these platforms allow two-way communication between instructors and students. This finding was based on the analysis of seven key questions to find out what students thought would be the best teaching approaches and tools for lectures, exercises, and lecture notes. Additionally, live classes conducted with learning platforms like Microsoft Team can be recorded and shared with students for their records in the future. Students can use this platform to improve their comprehension of the material by playing back the recorded session multiple times at their own leisure. The study also discovered that students prefer to receive their lecture notes via learning platforms like Microsoft Teams, Google Classroom, or ufuture, a learning management system (LMS) that UiTM offers to all of its instructors and students. These platforms are essential to increase the

effectiveness of the ODL system because they provide a centralised location where instructors and students can easily access and refer to the reference materials for each course throughout the semester.

The respondents also agreed that the same educational resources should be distributed via their class Telegram or WhatsApp group. Given that students can readily access the materials, this may be an additional faster method of distributing the materials. This is due to the fact that, in contrast to students who own a laptop or desktop computer (46.8%), almost all students own a smartphone and use it as a learning tool for ODL classes (96.3%). Less than one-third of the students (27.5%) expected to have exercises for every lecture topic, according to the study. The fact that students have a lot of assignments and tasks for other courses in addition to managing ODL classes, which occasionally go beyond the scheduled time, is the reason they were unhappy to have exercises. Nonetheless, a majority of the students (89%) concurred that playing online games like Kahoot can help them better understand the subjects covered in the lectures. Besides lecture, to make the class more effective, it is important to identify the student's preference on delivering hands-on materials during lab session. Figure 2 shows students' preference on the methods of delivering hands-on materials during lab session.

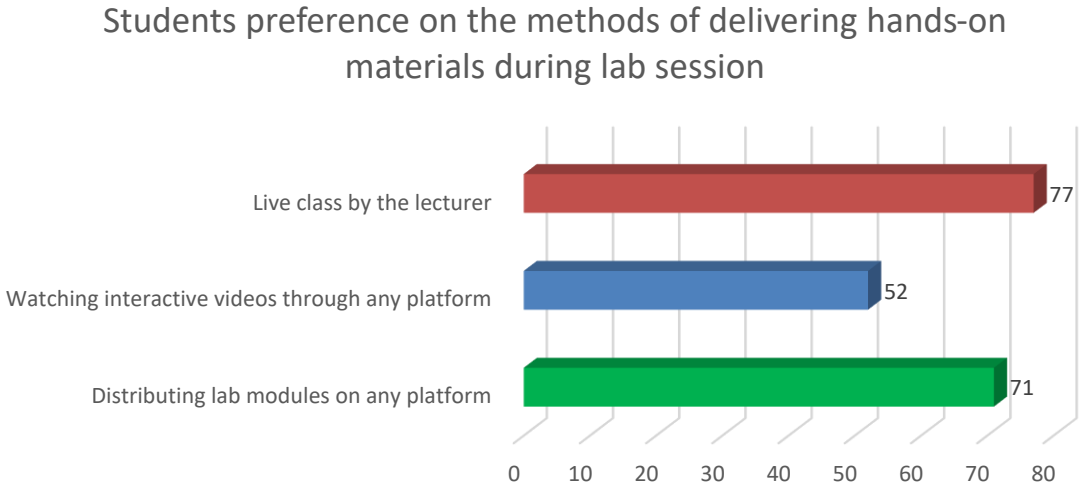

Fig. 2. Students' preference on the method of delivering hands-on materials during lab session

Based on the findings, 77 students, or 70.6% of the student prefer live instruction while receiving hands-on materials during ODL. This is due to the fact that it will be simpler for students to raise questions and receive prompt answers from the lecturer in a live session.

Table 3 below shows the results based on the Likert Scale done on the student's preference in delivering the types of hands-on materials during lab session.

Table 3
Students' preference on delivering the type of hands-on materials during lab session

Statements	Disagree	Agree	Totally Agree	Strongly Agree
I prefer referring to modules when learning the software/applications.	3 2.8%	23 21.1%	55 50.5%	28 25.7%
I prefer watching videos on how to use the software/applications.	3 2.8%	18 16.5%	55 50.5%	33 30.3%
I prefer the lecturer to show the usage of the software/applications during live class.	7 6.4%	7 6.4%	40 36.7%	55 50.5%

I prefer the lecturer to provide exercises on the software/application so that I can have an experience using it.	3 2.8%	23 21.1%	48 44.0%	35 32.1%
The lab exercises given to me helps me to understand better when using the software/applications.	4 3.7%	8 7.3%	40 36.7%	57 52.3%
The lab exercises given to me build more confidents when I am using the software/applications.	5 4.6%	7 6.4%	35 32.1%	62 56.9%
The lab exercises given to me help me to be more creative.	10 9.2%	3 2.8%	33 30.3%	63 57.8%

The results indicate that, in addition to lab exercises to assess and deepen the students understanding of the applications, majority of students preferred the lecturer to demonstrate the features and usage of the applications during live class.

Conclusion

In conclusion, these findings have identified the technical issues and difficulties in carrying ODL lecture classes for Interactive Multimedia course among students. Since majority of students (95.4%) are staying at home during ODL and only a minority of 9% of the students are not facing any technical issue such as slow internet connection, coverage problem or not enough mobile data, it is important for the lecturer to find the most suitable instructional method and tools to conduct their ODL lecture classes. Most of the students prefer live classes through platform such as Google Meet, MS Team or ZOOM to deliver the learning content. This is because through live class, there will be a two-way communication where the lectures can show live tutorials and students can ask and get the answer immediately. Enhancements in the method for conducting the ODL lessons must be a high priority and should be enriched in future semesters. Lecturers should practice alternative approaches that suit students' technological limitations and technical concerns in order to facilitate the delivery of successful ODL classes and to increase the interests of students on Interactive Multimedia course. Students are also expected to adapt themselves to online distance learning methods despite their shortcomings, be more independent and always have effective communication with their lecturers throughout the semester.

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