

# Students' Experiences towards Open and Distance Learning (ODL) Service Quality in UiTM Puncak Alam

Journal of Tourism, Hospitality & Culinary Arts (JTHCA)  
2021, Vol. 13 (2) pp 127-155  
© The Author(s) 2021  
Reprints and permission:  
UiTM Press  
Submit date: 15<sup>th</sup> October 2021  
Accept date: 06<sup>th</sup> December 2021  
Publish date: 28<sup>th</sup> December 2021

**Nur 'Aliah Kamarul Azlan**

*aliahazlann@gmail.com*

**Rafael Amirul Azman**

*rafaelamirul98@gmail.com*

**Wan Nur Athirah Wan Mohd Azman**

*athirahazman1998@gmail.com*

**Zurinawati Mohi\***

Faculty of Hotel and Tourism Management

Universiti Teknologi MARA, Puncak Alam Campus, Selangor, Malaysia

*zurin979@uitm.edu.my / zurin979@gmail.com*

## Proposed citation:

Kamarul Azlan, N.A., Azman, R.A., Wan Mohd Azman, W.N.A., & Mohi, Z. (2021). Students' Experiences towards Open and Distance Learning (ODL) Service Quality in UiTM Puncak Alam. *Journal of Tourism, Hospitality & Culinary Arts*, 13(2), 127-155

## Abstract

Open and Distance Learning (ODL) implemented in Malaysia from the pandemic COVID-19 exhibits a gap in the online tertiary education system. Adapting to staying at home while schooling simultaneously during the pandemic stir up the students' experiences towards the ODL service quality dimensions. This study explores five distinct ODL Service Quality Dimensions influencing the students' experiences (i.e., Learning Environment, the Practicality of the ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and the Course Content). The target population are the students of UiTM Puncak Alam Campus. The minimum sample size is 322, following Krejcie and Morgan table based on the 21,000 students enrolled in the semester March-August 2021 in UiTM Puncak Alam. Data was collected from nine faculties in UiTM Puncak Alam Campus adopting the snowball sampling. The items used to measure the constructs were adapted from previous studies and tailored to the setting. Four hundred five completed questionnaires were obtained within two weeks of data collection using google form. The results depict that the hypothesis derived from this study is partially supported due to the unsatisfactory experiences from the respondents of UiTM Puncak Alam Campus participating in this study. In that case, exercising a comprehensive action could mitigate the gap in the education system. Better education experiences will foster a competent graduate for the industry. The befitting skills for a high-quality graduate include adaptability skills, critical thinking, decision-making, and self-sustaining skills. Encapsulate, the responsibility of recovering the gap between ODL Service Quality Dimensions and the Students' Experiences lies on the students, the family, educators, and the body of knowledge.

## **Keywords:**

ODL Service Quality Dimensions; Learning Environment; Practicality of the ODL Platform; Student-Student Interaction; Student-Lecturer Interaction; Course Content; MCO; COVID-19; UiTM

## **1 Introduction**

Coronavirus disease 2019 (COVID-19) is a novel pneumonia disease that was affirmed by the World Health Organization (WHO), originating in Wuhan, China, on the 12<sup>th</sup> of January 2020, before seemingly outbreak in all countries (Cennimo, 2021). The Movement Control Order (MCO) was declared on March 18<sup>th</sup>, 2020, and the first deaths in the country were registered the following day (Bernama, 2020). Following the MCO announcement imposed by the Malaysian government, schools and higher institutions were directed to close, and the students living in hostels were sent home (Hassan, 2020). With the changes made, all extracurricular activities are adjourned until further notice. As for UiTM, they have led the switch from physical classes to Open and Distance Learning (ODL) classes as of April 13<sup>th</sup>, 2020, to continue the semester. All academic activities shall continue during ODL classes, covering synchronous and asynchronous methods (Karim, 2020; Zahari, n.d.).

ODL is not of new ways of learning methods in Malaysia. Many education institutions were already implemented this learning method before the COVID-19 pandemic. In the pre-e-learning period, the growth of distance learning in Malaysia began when the Ministry of Education built up the Education Technology Division in 1972 (Asirvatham et al., 2006). One of the institutions, Maktab Adabi Maharani (MAM), conducted ODL for a long time. MAM started operating as a physical school in 1972 by the chairman of Kumpulan Maktab-Maktab Adabi Sdn Bhd (KMMASB), Datuk Syed Mansor and 200 students were enrolled (Zakaria, 2017). After several years, MAM Online was developed to make it easier for students to use e-learning materials in preparation for their *Sijil Pelajaran Malaysia* (SPM examination for Malaysian upper secondary education) (Maktab Adabi Maharani Online, n.d.). Also, e-learning in Malaysia is not alien to the Universiti Teknologi MARA (UiTM) students; full-time students have been introduced to blended learning in some courses (Shahril et al., 2019). The students are also encouraged to enrol in the Massive Online Open Course (MOOC) courses (Safri et al., 2020a). While the part-time students, UiTM offers a distance learning program, Institute of Continuing Education and Professional Studies or iCEPS (former known as Institute of Educational Development or InED) through Learning Management System (LMS – uFuture), Virtual Learning Environment (VLE), iclass, and open learning digital content (Endut et al., 2012; Hashim et al., 2010; Wahab et al., 2021). Although the ODL was implemented a long time ago, this learning method became a prominent method due to the COVID-19 pandemic. In a short time, the COVID-19 pandemic has influenced and challenged the process of teaching and learning worldwide (Chung et al., 2020).

In response to the MCO, less privileged students were concerned about higher institutions closure (Yee, 2020). The sudden shift of learning practices in UiTM left

most full-time students unprepared. Due to unfamiliarity with the world pandemic, students who returned to their homes during the first lockdown did not bring along learning equipment such as laptops, books, and notes needed for their study. However, part-time students who choose e-learning are prepared concerning internet stability, environment disturbance, and mental preparation before starting distance courses (Nassr et al., 2020). In Malaysia, UiTM students came from various financial backgrounds, from bottom 40% (B40), middle 40% (M40), and top 20% (T20). Students from all over Malaysia faced some challenges during ODL implementation, especially those from the B40 household.

The students must manage themselves in an unfamiliar context; they are worried about the many difficulties, such as technology management, internet access, and social interactions. Some students have experienced difficulties with the internet connection or limited internet data usage during ODL classes. Therefore, they prefer to use ODL platforms that only consume minor internet data to avoid obstacles during the learning session or course assessments. It will increase the satisfaction of the students' experience through ODL classes (Lee, 2020; Whipp & Chiarelli, 2004). Besides technical challenges and time management, the ambience of students' homes for ODL must also be considered. The learning environment of ODL classes plays a big part in studying. ODL classes enable students to learn in an informal environment, study in the comfort of their own homes and wear casual clothes while still attending classes (Shah et al., 2020; Zakaria, 2020).

Nevertheless, home does not necessarily mean *home* to some students. Although some may perceive ODL as having classes wherever they deem convenient, unfortunately, students coming from the B40 households are the ones to be disadvantaged (Bijeesh, n.d.; Nassr et al., 2020). Ismail et al. (2020) exhibit the non-conducive learning environment as part of challenges faced during ODL among students from B40 families (see Table 1). However, adjustments must be made to accommodate the learning process with a different learning environment.

Table 1: Challenges and Illustrative Quotations on Non-Conducive Environment

Challenges	Illustrative Quotations
Non-conducive environment	<p>“There are students who cannot study online at home due to the fact that <u>the siblings are still small</u> and the <u>house space is small</u>, and there is <u>no special place to study</u>. Want to study outside, not allowed as the government’s Movement Control Order (MCO) which prevents them from leaving the house.”</p> <p>“I don’t mind online learning. But I want to apologise. Sometimes my <u>housing area (flats) is a little noisy.</u>”</p>

Source: Adapted from Ismail et al. (2020, p. 7155)

The second challenge is interaction issues; (1) the interaction between the lecturer and the students, and (2) the interaction between students. Communication is vital for any course experience (Rochester Institute of Technology, n.d.). Due to the complexity of ODL, where there is an absence of face-to-face interaction with lecturers, students

may have difficulty learning and completing their assessments if perceived lack of feedback with distant lecturers (Dzakiria, 2012; Dzakiria & Christopher, 2010; Dzakiria et al., 2005; Dzakiria et al., 2013). For example, in the social media Twitter, a tweet from Hashim (2021, January 22) as she claimed:

*"My performance went downhill since ODL. Different people have different situations. I can't imagine my next semester if it's still ODL. Too many miscommunications, it turns out what I understand is different with what the lecturer mean, and other issues as well" (Hashim, 2021, January 22)*

The interaction usually occurs in a classroom environment, as students listen to each other's opinions, engage in discussion, and create relationships through regular communication. However, in the ODL, the discussion among classmates needs to be online as students already start ODL in their own homes. Communication among students using certain media may be immediate or delayed and affect the learning experience (Dzakiria et al., 2005). There are many complaints on social media, especially Twitter. One of the tweets is from Balqis (2021, January 24) that exhibit her struggle in ODL without her friends:

*"You see, why online class and studying at home is not for me, is because I'm the type to study in groups and I like interactive learning where it's face to face, and I know online classes pun ada interact, but it's different. I'm really struggling in ODL rn" (Balqis, 2021, January 24)*

Various platforms are available to conduct ODL, as different courses need a different approach for delivering the course contents; the students may perceive each subject differently, depending on their level of comprehension. As many full-time students are unfamiliar with online pedagogy, it becomes a barrier to comprehend the contents well (Dzakiria & Christopher, 2010; Kadar et al., 2020; Safri et al., 2020b; Wahab et al., 2021). Traditionally, a restaurant service course is easily taught in the mock restaurant in physical classes. Students can understand everything as they follow the role-plays and hands-on activities. Contrary to ODL classes, the divergence of platforms used to teach a course makes it difficult for slow learners to catch up with the new learning method and grasp overall course contents taught by lecturers. Conducting the courses should include a fun and innovative way of sharing and delivering knowledge so that the students comprehend the knowledge (Shahril et al., 2019), especially when conducting the ODL classes.

Hence, this study sought to explore UiTM students' experiences towards ODL Service Quality Dimensions among full-time students who undergo ODL during the pandemic COVID-19. Responding to the problem, the research objective for this study is formulated, i.e., to examine the relationships between the UiTM students' experiences and the ODL service quality dimensions (i.e., Learning Environment, the Practicality of the ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content) at UiTM Puncak Alam Campus, Selangor during the COVID-19 pandemic.

## **2 Literature Review, Development of Research Framework, and Research Hypotheses**

### **2.1 Open and Distance Learning (ODL) Service Quality Dimensions**

In adopting distance learning classes, e-learning, a technique developed from distance learning, has attracted significant interest from public universities (Goi & Ng, 2008). An open learning framework has no entry criteria other than the most obvious, like age (Simpson, 2013). While there may be face-to-face components, a distance learning system provides classes and assistance across various distance media such as communications (Simpson, 2013). Following the COVID-19 outbreak, which was later declared a global epidemic by the World Health Organization, the worldwide educational system has seen approaching schools, colleges, and other institutions (Samat et al., 2020). This study proposed five dimensions of ODL Service Quality Dimensions: Learning Environment, The Practicality of the ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content.

#### *2.1.1 Learning Environment*

The learning environment describes the settings where the study takes place (EdGlossary, 2013). Nevertheless, the atmosphere plays a crucial role in memorising and understanding the contents (Ameritech College of Healthcare, 2015). For example, playing background music can induce creativity, while reading may need quiet and serenity (Mehta et al., 2012). The students' performances do not primarily depend on the teaching method, whereas the environment is among the factors contributing to students. Inconsistent temperature, background noise, and dim lighting are a few factors that determine students' experiences throughout their study (Chonghui, 2020).

Adhering to WHO's suggestion, physical distancing is compulsory to curb the spreading of the COVID-19 virus following the closure of schools and universities in Malaysia (Bernama.com, 2020). That leaves students to continue their ODL classes' at-home convenience. The learning environment of ODL classes plays a big part in studying; most of their homes will be their classroom during ODL classes, and distractions may come from family members, some students may have been distracted by house chores or having to help their family financially upon being affected by the MCO (Karim, 2020). Some families may support the students during ODL classes, and some may be unsupportive towards the students' shifting in learning. Common distractions faced include talking to the student, asking questions while doing work, asking for help to complete house chores, noises from the internet cafe, and more that may seem nearly impossible to avoid. Students need to create boundaries and make sure their family members understand which disruptions are acceptable and which matter should wait until their learning time is complete.

#### *2.1.2 The Practicality of the ODL Platform*

Platform in computing indicates a type of software the public uses in their daily lives, for instance, Windows platform and Google Android mobile platform (Cambridge

Dictionary, n.d.). IGI Global (n.d.) connotes the e-learning platform as an online information system that schools and institutions utilise to deliver teaching and learning practices.

Before the pandemic COVID-19, UiTM established its e-learning, i.e., LMS known as UFuture, which provides various tools assisting students in their e-learning platform to replace the earlier system, i.e., i-Learn (Endut et al., 2012; Othman et al., 2020). Ufuture is also a platform to replace the OpenLearning that no longer economically support MOOC courses with the escalating number of students enrolled in UiTM (Latiff et al., 2019). Nevertheless, the use of UFuture was not compulsory so far; thus, many lecturers have opted for a more user-friendly and free platform such as Google Classroom, Zoom Meeting, Webex Cisco, Microsoft Team, and other social media such as WhatsApp, Telegram, Facebook Live, and YouTube (Chung et al., 2020; Kadar et al., 2020).

When COVID-19 continued to spread worldwide, students were commonly accessed through educational platforms such as language apps, virtual tutoring, video conferencing tools, and e-learning software (Othman et al., 2020). The glitch of ODL classes at home slows down students' learning process comprising internet stability and the absence of appropriate gadgets (Lee, 2020; Michigan State University, 2020). Mainly, students from rural areas encountered unstable internet connection problems due to geographical factors, like Sabah and Kedah students (Lee, 2020). Many students are also not equipped with the technical and computer literacy skills upon joining ODL classes (Ismail et al., 2020).

Additionally, based on Chizmar and Walbert (1999) participants on a study regarding e-learning led by the ethics of excellent schooling methods, students can select and choose various learning experiences and techniques that best match the way they learn. Moreover, the students may obtain the information for their schoolwork and projects, prepare their slides for presentation, and get updates on the latest news globally through e-learning with an internet connection and modern devices (Clover, 2017).

### *2.1.3 Student-Student Interaction*

Interaction is defined as a transaction between two individuals who want to exchange information, but it may also be an exchange of products or services (Hornbæk & Oulasvirta, 2017). Positive social interactions between students are crucial to their cognitive, social, and communication development (Bruce & Hansson, 2011). Besides, positive student interaction will eventually influence students' motivation in education and performance (Johnson, 1981). Positive interactions between students could lead to developing their insight skills. Through communication with peers, students gain the opportunity to view opinions other than their own to perceive problems and challenges, especially in groups discussion.

During the COVID-19 crisis, there was a change in the student social lives, including social interactions, social support, study group, and friendships. During the COVID-19

crisis, some students may be at a higher risk of social isolation and the development of mental health disorders. This is because they have less face-to-face interaction with friends, especially their classmates, receive less social support, and are less integrated into student social networks (Elmer et al., 2020).

Although ODL is the safest way to keep learning while physically distancing with other people, it also brings some difficulty in the interaction, especially among students. Some students may feel that communication is more restricted for e-learning and group discussions conducted through video meetings and online chat rooms (Lim, 2020). Lack of interaction can also affect teamwork as most assessments are project-based teamwork activities, forcing students to figure out how to work together. Students complained about the difficulty of agreeing on schedules as every group member has their thing to do in their home. If the students struggled to handle teamwork, it might affect their performance if other team members had different opinions (Salmi, 2013).

#### *2.1.4 Student-Lecturer Interaction*

The interaction between students and their lecturers is one of the top three most significant variables to keep the learning process smoothly (Wang, 2004). When the learning process goes smoothly, how educators communicate with students helps convert the learning content to students' understanding that is important to learning (Englehart, 2009). Positive interaction between students and lecturers in classes is essential for creating a positive relationship between them and developing their social skills (Pennings et al., 2018). Developing a healthy teacher-student relationship through communication helps develop students' behavioural, social, and emotional well-being and supports their mental health (Brazelton & Greenspan, 2000).

Due to the COVID-19 outbreak, the student and the lecturer face many challenges maintaining their relationship through interaction (Ilias et al., 2020). Students may have difficulties learning as they lack motivation, alienation, and isolation as they see themselves as an online component. Students considered e-learning less engaging than other learning and insufficient to help students feel more connected to their teachers or lecturers via social media platforms like Facebook, WhatsApp, WeChat, and email (Ilias et al., 2020). The interaction between students and lecturers became limited as they faced challenges such as inadequate internet coverage that affected the learning flow.

The communication between the students and the course lecturers is designed to help the students better understand the material or illustrate the definitions of the course content (Dzakiria, 2012). Dzakiria (2012) also states that the most common communication problem between students and lecturers through ODL is when students send questions and problems via the lecturers' email. The answer is left unanswered or insanely late. The students also need to find a time that follows the lecturer's schedule to interact with them to ask questions and perform better.

### 2.1.5 Course Content

The course content as video recordings, assigned readings, slides, and any informative material necessary for the learning process (UC Berkeley, n.d.). In Malaysia, blended learning is not uncommon since many universities practice hybrid learning in their institutions (Ag-Ahmad, 2020). Although the bright side of ODL for students, comprising their ability to improve their computer literacy skills and fully utilised gadgets as learning tools, many are still adapting to the changes while comprehending course materials provided by lecturers.

Due to the absence of the final examination, students have an extra task to complete as continuous assessments. Those factors contribute to students' comprehensive skills towards course content provided by lecturers. Some may even be too busy completing their assignments rather than understanding the subjects for personal development. During this pandemic, switching from traditional learning to ODL mode has left some students perplexed about course content requirements for the rest of the semester (Friedman, 2020). Moreover, learning adjustment may be remarkably difficult for students taking classes best suited to physical training, such as science lab components classes (Friedman, 2020).

Sometimes, as the consumers of e-learning, students might not search for the course content provided to them; therefore, they need the instructors' explanation through e-learning (Twigg, 2001). In accommodating the e-learning system, some educators opted for an asynchronous classroom to offer an equal chance of accessing the course content (Kelly et al., 2020). With that in mind, students must complete their assignments on schedule as the deadlines (Kelly et al., 2020). On the flip side, some students agreed that e-learning is more demanding than physical classes since the workload be twice as much (Ag-Ahmad, 2020). The pre-recorded videos from lecturers facilitate most students in comprehending the contents as they could play, rewind, and fast-forward depending on their learning ability (Mathew & Chung, 2020).

## 2.2 Development of Research Hypotheses

Students play a significant role in giving feedback regarding e-learning facilities that have been provided to them, service quality and the efficacy of their learning experience (Li & Lalani, 2020). Lim (2020) found that students complained about more mandatory assignments from professors in an e-learning environment. Students had to confront obstacles as well, and according to a study concentrating on students' perspectives on e-learning, the primary challenges that students encountered were accessibility, connectivity, a lack of adequate devices, and social issues represented by a lack of engagement and communication with teachers and peers (Aboagye et al., 2021). The students' technical issues continue to be weak internet connections, signal loss, and a lack of sufficient digital equipment, particularly for students living in rural areas or from low-income households (Michigan State University, 2020). Therefore, the following hypotheses are formulated:

H1: There is a positive relationship between ODL Service Quality Dimensions (i.e., Learning Environment, The Practicality of the ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content) towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor

e-learning may occur anywhere such as at home, at work, internet a cafe, or anywhere through smartphones, laptops, computers if it is connected to the internet because it is not limited by space and time (Bhuasiri et al., 2012; Kilburn et al., 2014). The learning environment may impact students' learning by 25% (Cooper, 2018). Therefore, the following hypothesis is formulated:

H<sub>1a</sub>: There is a positive relationship between the learning environment towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor

e-learning or ODL used extensively in most universities. It is easily accessible to class discussions, course materials and activities as it may be accessed from any computer, whether from the campus or our home (Ratcliff, 2001). Students may access their courses anywhere and anytime, as well as continual access to materials of courses, lectures, and discussions (ION Professional ELearning Programs, n.d.). Therefore, the hypothesis is formulated:

H<sub>1b</sub>: There is a positive relationship between the practicality of the ODL platform towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor

Effective interaction between students is essential in problem-based educational experiences (Lindblom-Ylänne et al., 2003). Effective teamwork or group discussions and cooperative learning are significant to the ODL scene because they engage the students to finalise their academic assignments (Dzakiria & Walker, 2003). This method of student interactions is designed to promote understanding of the subject's material and enhance critical thinking. A study from Palloff and Pratt (2002) indicates that discussion groups, teamwork and assignments based on groups may reduce feelings of alienation and encourage a positive environment and group studying in ODL classrooms that support their learning experience. Therefore, the following hypothesis is formulated:

H<sub>1c</sub>: There is a positive relationship between the student-student interaction towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor

Although teachers and students come to distance learning with different technical abilities and responsibilities, both groups usually have similar approaches to the impact and effectiveness of the interactions (Nguyen, 2009). The lecturers and students acknowledged the effectiveness of interaction in online education, including encouraging student participation and fostering a sense of process and interaction influence (Nguyen, 2009). Nguyen (2009) also states that the online community

enhances student communication abilities. The study from Krishnamurthi (2000) states that saving recordings of discussions and studying them later to show students their communication styles benefit online interactions. Students can experience a new way of studying if they engage in the learning process by participating in online forums, accessing, and exchanging course materials, and submitting questions related to their lecturer (Kwaske & McLennan, n.d.). Therefore, the following hypothesis is formulated:

H<sub>1d</sub>: There is a positive relationship between the student-lecturer interaction towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor

ODL may make students adapt to various learning styles regarding the course content. Some students may adapt to these styles quickly, and some need time to learn (Embibe, 2021). The learning platform may differ depending on the course learning, but typically, it consists of online platforms that students may access from their personal computers, smartphones, and tabs (Educations.com, 2020). Therefore, the following hypothesis is formulated:

H<sub>1e</sub>: There is a positive relationship between the course content towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor

### 2.3 Development of Research Framework

Figure 1 demonstrates the relationship of the ODL service quality dimensions (i.e., the Learning Environment, the Practicality of the ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content) that affect students' experiences towards ODL in UiTM in Puncak Alam Campus, Selangor.

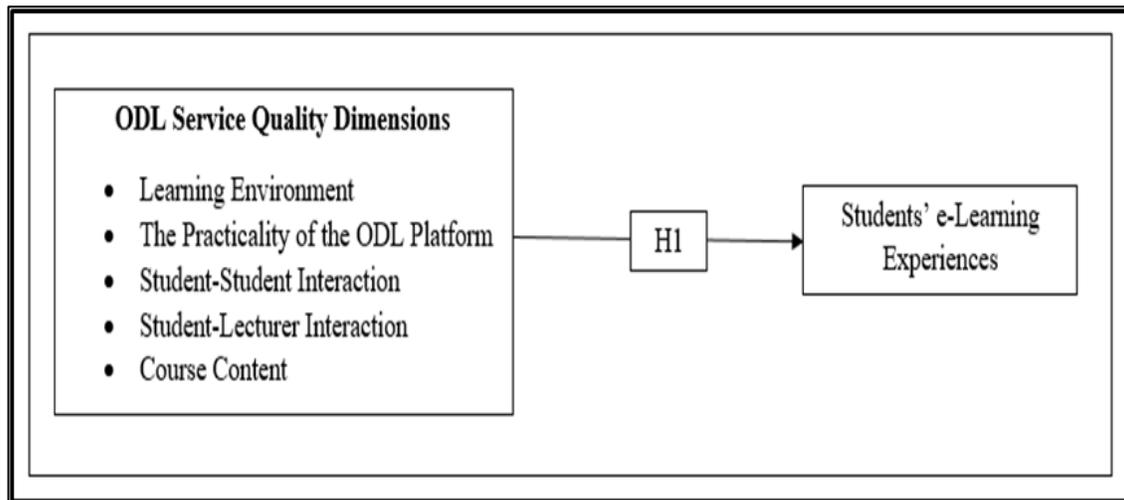


Figure 1: Proposed Research Framework

Notes: Construct and dimensions are adapted from previous studies; learning environment (Karim, 2020; Muda & Yee, 2019; Nassr et al., 2020); The Practicality of the ODL Platform (Mathew & Chung, 2020; Nassr et al., 2020; Pham et al., 2019; Samat et al., 2020); student-student interaction (Abbasi et al., 2020; Ag-Ahmad, 2020; Bali & Liu, 2018; Muda & Yee, 2019; Mwenje & Saruchera, 2013); course

content (Ag-Ahmad, 2020; Mathew & Chung, 2020; Muda & Yee, 2019; Mwenje & Saruchera, 2013); and students' experiences (Allam et al., 2020; Chen et al., 2020).

### 3 Methodology

The questionnaire is adapted from the existing studies and tailored to the setting (see Table 3). Due to the COVID-19 restriction, the draft questionnaire is created in Google Form. Dissemination of the questionnaire targeted all UiTM Puncak Alam full-time students who participated in ODL throughout the COVID-19 pandemic. Following Krejcie and Morgan table, the minimum sample size is 322 based on the total enrollment students in the semester March-August 2021 in UiTM Puncak Alam is 21,000 students. The sampling technique used in the study is snowball sampling.

The draft questionnaire was through validity and reliability procedures. Five lecturers and five students of UiTM Puncak Alam were chosen to provide comments and suggestions to improve the questionnaire's content. All items were measured on a seven-point Likert Scale ranging from 1 (strongly disagree) to 7 (strongly agree). A pilot study was conducted once the draft questionnaire was corrected following the suggestion. The score for pilot testing of 50 students of UiTM Puncak Alam as respondents in this study ranges from 0.634, and 0.907 value shows internal consistency (Hair et al., 2010). Besides, each variables' values are significant as the Cronbach Alpha's value is greater than 0.70.

### 4 Findings

Adopting the snowball sampling technique, the Google Form link was forwarded to the UiTM Puncak Alam Campus students through WhatsApp group, Telegram group, and social media Twitter and Instagram (direct messages) to ensure the questionnaires reach a comprehensive set of respondents. The questionnaires were distributed and collected directly through Google Forms. The time frame for data collection is approximately two weeks from the 3<sup>rd</sup> until 16<sup>th</sup> June 2021 to ensure the respondents have sufficient time to answer and reach targeted respondents all over the campus and prevent any error in collecting data. Demographic data analysis exhibits that the data collection procedures received responses from participants across all campuses (see Table 2).

Table 2: Demographic Profile (N=405)

Category	Items	Frequency	Percent (%)
Gender	Male	127	31.4
	Female	278	68.6
Age	18 – 20 years old	34	8.4
	21 – 23 years old	290	71.6
	24 – 26 years old	62	15.3
	27 and above	19	4.7
Education Level	Diploma	25	6.2
	Degree	358	88.4

Category	Items	Frequency	Percent (%)
Faculty	Master	21	5.2
	Professional	1	0.2
	Medicine	13	3.2
	Pharmacy	28	6.9
	Health Science	19	4.7
	Accountancy	20	4.9
	Education	39	9.6
	Business and Management	72	17.8
	Hotel and Tourism	184	45.4
	Management	11	2.7
	Sports Science & Recreation	10	2.5
	Architecture, Planning & Surveying	9	2.2
	Faculty of Art and Design		
Participation of ODL	1 semester	40	9.9
	2 semesters	115	28.4
	3 semesters	250	61.7
Type of Devices Used for ODL (Respondents can choose more than one device)	Smartphone	360	88.9
	Laptop	382	94.3
	Tablet/iPad	69	17.0
	Common Computer	25	6.2
	Other	0	0
Shared Devices	Yes	85	21.0
	No	320	79.0
Internet Speed	Good	126	31.1
	Average	249	61.5
	Poor	30	7.4
Hours Learn Through ODL	6 hours	140	34.6
	8 hours	136	33.6
	10 hours	62	15.3
	More than 10 hours	67	16.5
Area of The Students Live in	Urban area	165	40.7
	Suburban area	170	42.0
	Rural area	70	17.3

Table 3 provide the means and standard deviation distribution of all items. Table 3 also itemized the source of the measuring items used in the questionnaire.

Table 3: Descriptive Statistics (N=405)

Items	Statement	Authors	Mean	Std. Deviation
<b>Learning Environment</b>				
B1	My home environment decently accommodates my learning needs	(Karim, 2020; Muda	4.75	1.352
B18	I can stay focused during ODL classes despite the distractions from family members (house chores,	& Yee, 2019; Nassr	3.86	1.586

Items	Statement	Authors	Mean	Std. Deviation
B27	chatting) My adaptation process from the physical classroom to attending ODL classes at home took longer than I expected	et al., 2020)	5.06	1.415
B5	My family gave me full support throughout my ODL session		5.20	1.501
B17	I do not encounter conflicts with my family during ODL classes as I must attend to both study and personal matters at home		4.60	1.656
<b>The Practicality of ODL Platform</b>				
B2	My internet connection is stable enough for me to participate in ODL classes		4.57	1.500
B23	I have proper gadgets to participate in ODL classes	(Mathew & Chung,	5.39	1.357
B9	I do not encounter long delays when searching and accessing the platforms used by my lecturers	2020; Nassr et al., 2020;	4.63	1.413
B13	I have the necessary skills in using ODL platforms as instructed by lecturers	Pham et al., 2019;	4.86	1.262
B21	Technologies and platforms used during ODL make it easier for students to submit assignments and assessments	Samat et al., 2020)	5.24	1.374
<b>Student-Student Interaction</b>				
B20	My groupmate is responsive regarding assignments/tasks during ODL classes	(Muda & Yee, 2019;	4.80	1.404
B6	During ODL classes, my discussion in the class is lively	Mwenje & Saruchera,	4.27	1.423
B16	My classmate gave me full support throughout my ODL classes	2013; Nassr et al., 2020;	4.89	1.439
B25	I received motivational support in completing each task assigned by my peers	Segoe, 2014)	4.84	1.414
<b>Student-Lecturer Interaction</b>				
B4	During ODL classes, I receive sufficient feedback regarding my assignments from lecturers	(Abbasi et al., 2020;	4.58	1.370
B15	My lecturers are easily reachable in ODL classes as compared to face-to-face learning	Ag-Ahmad,	4.46	1.432
B11	I received prompt and helpful feedback from my lecturers regarding assignments and course content	2020; Bali & Liu, 2018;	4.80	1.390
B14	My lecturers are empathetic of the challenges faced while attending ODL classes at home	Muda & Yee, 2019)	4.85	1.471
<b>Course Content</b>				
B7	The teaching method used by my lecturers during ODL classes helped me understand the course content	(Ag-Ahmad, 2020;	4.64	1.323
B26	I understand course contents/materials better in	Mathew & Chung,	4.06	1.612

Items	Statement	Authors	Mean	Std. Deviation
B22	ODL I feel that my workload during ODL classes is reasonable as compared to face-to-face classes	2020; Muda & Yee, 2019;	3.65	1.686
B19	I find ODL classes as convenient as I can and have the capacity to learn according to my pace	Mwenje & Saruchera, 2013)	4.27	1.595
B24	Pre-recorded videos enable me to watch lectures video repeatedly if I find it hard to understand course content		5.37	1.488
<b>Students' Experiences</b>				
B8	Generally, I am more engaged in my study during ODL classes		3.96	1.578
B12	Generally, I have a better understanding of the lesson given by my lecturers in ODL classes	(Allam et al., 2020;	3.88	1.548
B10	Generally, I have improved my computer-literacy skills during ODL classes	Chen et al., 2020;	5.28	1.294
B3	Generally, I think ODL classes are more practical than physical classes	Dziuban et al., 2015)	3.67	1.683
B28	Generally, I have enhanced my time management skills during ODL classes		4.07	1.651

#### 4.1 Hypotheses Testing

The multiple regression analysis procedures were executed to analyse the relationship between the Learning Environment, the Practicality of ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content with the Students' Experiences during ODL. The breakdown of beta loading ( $\beta$ ) and p-value are as in Table 3. Only one dimension is significant to students' experiences towards ODL service quality in UiTM Puncak Alam Campus, Selangor.

The course content beta loading ( $\beta = .739, P < .001$ ) are less than 1% significant level reflecting that the Course Content dimension is significant to students' experiences towards ODL service quality in UiTM Puncak Alam Campus, Selangor. Hence,  $H_{1e}$  is supported, addressing research objective 1 and partially satisfying Hypothesis 1. Nevertheless, the other four dimensions  $H_{1a}$ ,  $H_{1b}$ ,  $H_{1c}$ , and  $H_{1d}$  are insignificance.

Table 4: Regression Analysis on Students' Experiences towards ODL Service Quality Dimensions

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
<b>Students' Experiences in UiTM Puncak Alam Campus, Selangor</b> (Constant)	.344	.220		1.562	.119
Learning Environment	.076	.048	.064	1.593	.112
Practicality of ODL Platform	.053	.051	.046	1.053	.293

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
Student-Student Interaction	.021	.044	.021	.481	.631
Student-Lecturer Interaction	-.054	.050	-.054	-1.079	.281
Course Content	.764	.047	.739	16.17	.000***
				8	

Note: \*\*\*Significant at 1% level; \*\*significant at 5% level; Significant at 10% level

## 5 Discussion

### 5.1 Discussion Pertaining Learning Environment and UiTM Puncak Alam Students' Experiences

Hypothesis<sub>1a</sub> proposed a positive relationship between the Learning Environment towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor. Nonetheless, results derived from this study do not support the hypothesis, exhibiting that this dimension is insignificant towards UiTM Puncak Alam Campus students' experience during the ODL. The academic pressure in adapting to the new e-learning system results in students' experiences from their unpreparedness in attending ODL classes from the learning environment aspect. The novel outcome from this study contradicts most studies before the COVID-19 pandemic, likewise from Dzakiria and Christopher (2010) study. This study indicates an insignificant relationship between the Learning Environment. Generally, the respondents do not have a satisfactory experience in their learning needs, focus, adaptation process, family support, and conflicts at home.

Minderhout (n.d.) recognizes four possible learning needs domains: cognitive, social, affective, and psychomotor. In a traditional classroom, students can comprehend content better from a familiar and comfortable setting (Headspace, n.d.). Besides, face-to-face classes facilitate students to focus better, without distractions from house chores and family interactions (Headspace, n.d.). To boot, educators have the power to determine the learning environment of a class, comprising physical location, mood, and interactions (Ananga & Biney, 2017). The characteristics of learning at home encompass the ability to think independently, give and receive support, manage time and tasks, and study in comfortable settings.

As UiTM students come from different financial backgrounds, hence, the variation in the home environment. Besides, Nassr et al. (2020) found that students had little motivation to continue e-learning since the adaptation process is rough and exhausting. In a way, Nassr et al. (2020) also mention that Asian universities themselves are not accelerating in e-learning adaptation. Ergo, having a conducive learning environment for ODL contributes to students' adjustment, comfortability, and focus. The students should consider this dimension in keeping their heads above water for ODL in the future.

## 5.2 Discussion Pertaining the Practicality of ODL Platform and UiTM Puncak Alam Students' Experiences

H<sub>1b</sub> proposed a positive relationship between the practicalities of the ODL platform towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor. However, results acquired from this study do not support the hypothesis, presenting that this dimension is insignificant towards UiTM students' experiences during ODL classes. The students' experiences in ODL classes depend on the practicality of the ODL platform as the platform is the only way to connect the students and their lecturers, submit assignments, gain knowledge, and discuss with their peers regarding assignments.

Most students struggle in ODL classes despite not having fast and stable internet connectivity during synchronous courses, especially those living in rural or low-income families. ODL classes are very dependent on internet access, and most of the students had their synchronous courses during weekday's morning to evening. However, most internet users are experiencing internet slowdown during 'internet peak hours', especially during the COVID-19 pandemic, where everyone starts to work and learn from home. The connection will slow down slightly during peak hours because the cable is routed through an area network node and has a necessary bandwidth shared by the entire neighbourhood (Holslin, 2021). Moreover, internet connection may become sluggish during the night, especially from 7 p.m. to 11 p.m., as people are commonly free during this time and are doing the brunt of their internet activities. Most of the students spend their time doing assignments given by their lecturers.

Gadgets are crucial in the educational field, especially during the COVID-19 pandemic, since they help students enhance their knowledge and skills. Most of the respondents from UiTM Puncak Alam students own electronic gadgets for learning purposes. The COVID-19 outbreak ushered in a digital revolution in higher education with online lectures, assignment submissions, digital open books, online examinations, and engagement in virtual spaces (Chatterjee et al., 2020). Therefore, there is no communication between students and lecturers without gadgets. Most classes will take place over video calls, and assignments will be completed via laptops compared to previous years. Students must attend face-to-face classes to gain knowledge and submit their work. The former youth minister, Syed Saddiq, had raised RM383,000 in his "1 Keluarga, 1 Laptop" (one family, one laptop) campaign, which will be used to purchase laptops for needy students in Muar, Johor (Tan, 2020). Syed Saddiq launched the campaign on 26<sup>th</sup> December 2020 to raise RM200,000 in five days. The laptops were distributed to the needy students at the Hajah Hasnah multipurpose hall in Muar on 31<sup>st</sup> December 2020 (Tan, 2020).

Furthermore, most students encountered technical problems with the ODL platforms used by their lecturers (delayed viewing messages, loss of signal, the sound was not clear, connecting to the platforms). Delayed and ineffective feedback can add to students' stress who are already grappling with the isolation and remoteness of distance learning (Musingafi et al., 2015). Accessing ODL platforms was occasionally

limited, and there were connection issues, particularly when many students connected to the platforms. Additionally, lack of technical skills is a significant barrier since students may be unable to use numerous ODL platforms and technologies to help them in ODL. If most students cannot use the ODL platforms and systems, they are little more than white elephants who serve no purpose (Musingafi et al., 2015). Besides, ODL platforms give students the benefit of assignment submission. They can submit their work on time and from anywhere without having to attend to a specific place or print out assignments (Mathew & Chung, 2020). Lecturers have the chance to upgrade their teaching methods and become paperless in this digital era, especially during the COVID-19 pandemic, because students will need to use more technology than paper when they enter the workforce.

### **5.3 Discussion Pertaining the Student-Student Interaction and UiTM Puncak Alam Students' Experiences**

H<sub>1c</sub> proposed a positive relationship between student-student interaction towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor. However, the findings demonstrate that this dimension does not affect UiTM students' ODL experiences. The result implies that the students faced a challenge in communicating with their peers, friends, classmates during ODL. The interaction between students during ODL, especially for discussions and assignments, is challenging as their groupmates do not respond. The students also receive a lack of motivational supports from the other students.

Dzakiria (2012) states that students who actively participate and are responsive with their learning peers in ODL may perceive more learning and experience positive learning, according to learner-learner interaction. It was also discovered that group work interaction and conversations aid students in understanding course content and minimize feelings of loneliness and boredom in various ways. However, there were some students prefer the traditional classes. The students feel that ODL makes the group discussions more complicated due to the lack of responses from their groupmates.

Kapasia et al. (2020) claimed that the lack of positive interaction between students during ODL is because of poor internet connection that can cause problems such as audio delay. As for the respondents from UiTM Puncak Alam Campus, some students have an average and poor internet connection, leading to difficulty interacting. Students who share the device with their family members will also face these challenges. The challenge is that they need to consider using the device to share the device, such as computers or laptops, with their siblings. Hence, the students need to overcome these challenges for their future learning during ODL.

### **5.4 Discussion Pertaining the Student-Lecturer Interaction and UiTM Puncak Alam Students' Experiences**

H<sub>1d</sub> proposed a positive relationship between the interaction between student and lecturer towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor.

Unfortunately, the findings of this study refute the hypothesis, demonstrating that this dimension does not affect UiTM Puncak Alam students' ODL experiences. The result implies that the students faced challenges communicating with their lecturers during the ODL. The interaction challenges between students and their lecturers come in various forms, such as a lack of feedback and support.

Feedback from the lecturer is important for students in completing their assignments. Giving students feedback is a crucial component of education since it is shown that it has a favourable impact on student academic performance (Burnett, 2002). Those students got appropriate feedback for their assignments and learning content to understand somewhat what they learned during ODL classes. Dzakiria (2012) states that students who receive immediate feedback and never have left unanswered questions about course content from their lecturer will perform better. Nevertheless, some students prefer more reassuring interaction from the lecturer, such as repeating a point or replying to a student's question, rather than merely comments on students' written work or email inquiries. In addition, Hara and Kling (2001) claimed that students suffer uncertainty, anxiety, and irritation due to a lack of immediate or precise feedback from their lecturers.

Most respondents feel it is difficult to interact with their lectures as they feel less connected. Rapanta et al. (2020) state that e-learning focuses more on interacting through materials such as videos, readings, and exercises. In contrast, face-to-face learning feels more connected as it focuses on in-person discussions and presentations. There are also cases involving two UiTM students who died over the weekend due to ruptured blood vessels. Both families claimed that their children had no underlying illnesses and suffered from terrible headaches because of their studies (Rozaidee, 2021). Due to this issue, the Academic Affairs of UiTM feel empathetic and executed the 'prihatin' initiative (*Perlaksanaan Tempoh Cuti Bertenang*), which all the course activities and assessments such as test, quiz, assignment, and the final year project put on rest from 16<sup>th</sup> to 21<sup>st</sup> July 2021 (Zain & Rahman, 2021).

## **5.5 Discussion Pertaining the Course Content and UiTM Puncak Alam Students' Experiences**

H<sub>1e</sub> proposed a positive relationship between the Course Content towards UiTM students' experiences in UiTM Puncak Alam Campus, Selangor. The results derived show a significant relationship between course content, supporting H<sub>1e</sub>.

ODL classes present two options of class administration: synchronous and asynchronous. The asynchronous method benefits students in general, considering external factors, likewise internet connection, time, and learning tempo. As classes have fully moved to ODL, teaching pedagogy implemented by lecturers should transform into a better fit for ODL. For instance, practical classes, namely cooking, serving, barista, and laboratory lessons should adapt to the ODL application. Lecturers may shoot a demonstration video or provide a clear and concise learning video on platforms (e.g., viz. YouTube, Facebook, and Instagram) for better syllabus delivery.

For instance, the Faculty of Hotel & Tourism Management (FHTM) students require practical classes and theory lessons. Considering most respondents are from the FHTM, the significant relationship between Course Content and UiTM Puncak Alam Students' Experiences in ODL demonstrate that the lecturers have successfully transformed and delivered comprehensive course content to students.

Moreover, the asynchronous method offers flexibility and allows students to learn according to their pace, supporting the Ag-Ahmad (2020) study. Respondents of this study find pre-recorded videos convenient as they can watch the videos repeatedly for better comprehension, at a lower cost, internet coverage. Students in suburban and rural areas seemingly vouch for the significant relationship since they experienced poor internet connection to attend ODL.

Better knowledge is delivered through the Course Content and teaching pedagogy, supporting Muda and Yee (2019) study. Thus, students can comprehend the course content and excel in their semester, despite the pandemic situation.

#### **5.6 Students' Experiences Discussion Pertaining ODL Service Quality Dimensions and UiTM Puncak Alam Students' Experiences**

H1 proposed a positive relationship between the ODL Dimensions and Students' Experiences of UiTM Puncak Alam Campus, Selangor. Many students are put off by the time commitment required to enrol in traditional learning. Some students view ODL classes as saving their time and energy, as they do not have to deal with heavy traffic and commute because they can study whenever and wherever they want, unlike traditional learning. Brooke (n.d.) mentions that e-learning provides a pleasant atmosphere to learn quickly and retain more information than traditional learning. E-learning allows students to download materials, complete the assessment and tests, and perform hands-on exercises independently.

Computer literacy is the knowledge and ability to effectively use computers and related technology, with a range of abilities encompassing several levels (Michael & Igenewari, 2018). Students should develop the confidence, skills, and discrimination necessary to appropriately adopt and utilize Information Communication Technology (ICT). Computer literacy skills will make the learning process of the students easy and lively as well as enable independent learning to the students. ODL platform is the best place for students to learn and enhance their applied technical skills as it will make them step outside their comfort zone and explore the world of digital learning. The ODL platforms give students optimal learning that would otherwise require much practice to master. The educational institutions in Malaysia must offer online counselling sessions to students stressed by the ODL platforms. Besides online counselling, public and private universities and colleges should offer free MOOC to allow students to master new skills during this period of movement constraints (Lim, 2020).

## 5.7 Conclusion

In conclusion, this study has shown a partially significant relationship between ODL service quality dimensions (i.e., Learning Environment, Practicality of ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content) and UiTM Puncak Alam Campus, Selangor students' experiences. The result shows that only Course content positively correlates with the UiTM Puncak Alam Campus, Selangor students' experiences during the ODL classes.

The epidemic of COVID-19 has altered the world, including educational systems. The unprecedented COVID-19 pandemic has left everyone in the education system unprepared with countless concerns in coping with the syllabus and continuing the school lessons. Malaysian students have been affected by the MCO, and education systems have shifted totally from traditional classes to ODL classes. Although universities online systems are ready for such changes, full-time students were not perfectly ready for this situation as they are engaged in traditional classes more than online classes. Therefore, universities and existing and future full-time students should be prepared for life after the COVID-19 pandemic, as education has been severely impacted by teaching innovations that may reshape it in the future. As for future advancement of ICT may also upgrade the education system in ODL teaching methods.

Internet disruptions during ODL classes only allowed one-way communication with the lecturers. Respondents found it is difficult to hear a sustained and clear voice stream from the lecturers during ODL classes when they are having internet instability. Therefore, the setback that affected many students during this unprecedented COVID-19 outbreak was a poor internet connection. Furthermore, students discovered that their homes were not conducive to learning due to family and comfort issues distractions. Most students were not ready physically and mentally in ODL classes. They rely heavily on university accommodations, have basic internet connections, and meet up with peers to discuss assignments, rather than being isolated in an inhospitable environment to learn.

Additionally, the novel outcome from this study depicts those students who are struggling with unsatisfactory experiences in ODL classes. Nonetheless, students are also responsible for joint hands to rectify the issues faced as some of them come from the students' part. Therefore, this study will be benefited the students in the future as the educators may gain better insight into the students' experiences in ODL classes. Consequently, it enhances and bridges the gap of the ODL Service quality. As the Course Content dimension exceptionally illustrates a significant relationship, other dimensions; Learning Environment, Practicality of ODL Platform, Student-Student Interaction, and Student-Lecturer Interaction, must be refined for a better ODL classes outcome. With that, educators are responsible for examining the effectiveness of e-learning and the factors contributing as well.

## **5.8 Limitation of the Research and Direction for Future Study**

There are few constraints during the study's development. This study has examined the relationships between ODL service quality dimensions and UiTM Puncak Alam Campus Selangor students' experiences. The sample size is one of the constraints in the study as the study only obtained responses from UiTM Puncak Alam Campus Selangor students. Therefore, expanding the sample size to other UiTM campuses or institutions outside the UiTM for better generalization. Moreover, the study may only distribute questionnaires in Google Forms through WhatsApp, Telegram, and Instagram as it is the only platform that could reach the respondents during the COVID-19 pandemic.

This paper identified five relevant ODL service quality dimensions (i.e., the Learning Environment, the Practicality of the ODL Platform, Student-Student Interaction, Student-Lecturer Interaction, and Course Content) to understand the students' experiences ODL classes. However, they could more relevantly dimensions (e.g., the productivity of learning from home and skill development) that researchers could include in the future when measuring ODL service quality dimensions and the student experiences.

Additionally, the proposed models can be replicated for future studies on students' experiences. Future studies could enhance the model by adding other constructs like financial capability and continuance intention to study to interpret students' learning experiences during ODL.

In other respect, the methodology of this paper could be improved, such as conducting interview sessions with the students participating in ODL to gain more important responses regarding ODL rather than collecting data through a questionnaire with an open-ended answer. In the future study, the data collection can adopt longitudinal; the data can be collected two times before the ODL class begins and the second time collected once the semester ends.

## **6 About the author**

Nur 'Aliah Kamarul Azlan, Rafael Amirul Azman, and Wan Nur Athirah Wan Mohd Azman are alumni from the Department of Hotel Management of FHTM, UiTM Puncak Alam Campus, Selangor. Their primary research interests include the Hospitality Industry and Service Management.

Zurinawati Mohi @ Mohyi, as the corresponding author, is an Assoc. Prof Dr at FHTM, UiTM, Puncak Alam campus. She has been in service with UiTM since 1998. Her research interest areas include Hospitality Industry, Service Management, Consumer Behavior, Food Service Industry, Service Marketing. The rest of the authors are students of the Faculty of Hotel and Tourism Management.

## 7 References

- Abbasi, S., Ayoob, T., Malik, A., & Memon, S. I. (2020). Perceptions of students regarding e-learning during Covid-19 at a private medical college. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4), S57. <https://doi.org/10.12669/pjms.36.COVID19-S4.2766>
- Aboagye, E., Yawson, J. A., & Appiah, K. N. (2021). COVID-19 and e-learning: The challenges of students in tertiary institutions. *Social Education Research*, 1-8. <https://doi.org/10.37256/ser.212021422>
- Ag-Ahmad, N. (2020). Open and distance learning (ODL): Preferences, issues and challenges amidst Covid-19 pandemic. *Journal of Creative Practices in Language Learning and Teaching (CPLT)*, 8(2). <https://cplt.uitm.edu.my/v1/images/v8n2/Article1.pdf>
- Allam, S. N. S., Hassan, M. S., Sultan, R., Mohideen, A. F. R., & Kamal, R. M. (2020). Online distance learning readiness during Covid-19 outbreak among undergraduate students. *Journal of Academic Research in Business and Social Sciences*, 10(5), 642-657. <https://doi.org/10.6007/IJARBS/v10-i5/7236>
- Ameritech College of Healthcare. (2015). *10 Tips for Creating Your Ideal Study Space*. Retrieved 22 August 2021 from <https://www.ameritech.edu/blog/tips-make-environment-best-study-space/>
- Ananga, P., & Biney, I. K. (2017). Comparing face-to-face and online teaching and learning in higher education. <http://dx.doi.org/10.52634/mier/2017/v7/i2/1415>
- Asirvatham, D., Kaur, A., & Abas, Z. W. (2006). *Country report: e-learning in Malaysia*.
- Bali, S., & Liu, M. (2018). Students' perceptions toward online learning and face-to-face learning courses. *Journal of Physics: Conference Series*, 1108(1), 1-7. <https://doi.org/10.1088/1742-6596/1108/1/012094>
- Balqis. (2021, January 24). [@nolongerskek] You see, why online class and studying at home is not for me, is because I'm the type to study [Tweet]. In: Twitter. <https://twitter.com/nolongerskek/status/1353353057027776513?s=20>.
- Bernama. (2020, 9 October). Malaysia entering 3<sup>rd</sup> wave of Covid-19 pandemic. *News Strait Times*. <https://www.nst.com.my/news/nation/2020/10/630761/health-dg-malaysia-entering-3rd-wave%20covid-19-pandemic>
- Bernama.com. (2020, 7 October). CMCO: Schools closure the right move to curb COVID-19. *Bernama.com*. [https://www.bernama.com/en/general/news\\_covid-19.php?id=1887204](https://www.bernama.com/en/general/news_covid-19.php?id=1887204)
- Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J. J., & Ciganek, A. P. (2012). Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers and Education*, 58(2), 843-855. <https://doi.org/10.1016/j.compedu.2011.10.010>
- Bijeesh, N. A. (n.d.). *Advantages and disadvantages of distance learning*. India Education. <https://www.indiaeducation.net/online-education/articles/advantages-and-disadvantages-of-distance-learning.html>
- Brazelton, T. B., & Greenspan, S. I. (2000). *The irreducible needs of children: What every child must have to grow, learn, and flourish?* Perseus Book Group Customer Service. <https://eric.ed.gov/?id=ED446878>
- Brooke, L. (n.d.). *How is e-Learning better than traditional learning?* Gordon Tredgold. Retrieved 22 June from <https://gordontredgold.com/how-is-e-learning-better-than-traditional-learning/>
- Bruce, B., & Hansson, K. (2011). Promoting peer interaction. *Autism Spectrum Disorders-From Genes to Environment*, 23, 313-328. <https://doi.org/10.5772/20034>

- Burnett, P. C. (2002). Teacher praise and feedback and students' perceptions of the classroom environment. *Educational psychology*, 22(1), 5-16.  
<https://doi.org/10.1080/01443410120101215>
- Cambridge Dictionary. (n.d.). *Education: In Cambridge Advanced Learner's Dictionary & Thesaurus* <https://dictionary.cambridge.org/dictionary/english/education>
- Cennimo, D. J. (2021, May 14, 2021). *What is COVID-19?* Medscape. Retrieved 20 June 2021 from <https://www.medscape.com/answers/2500114-197401/what-is-covid-19>
- Chatterjee, M., Saha, S., & Jha, M. (2020). *Transitioning classes into electronic gadgets: Life of students in lockdown*. DownToEarth.  
<https://www.downtoearth.org.in/blog/health/transitioning-classes-into-electronic-gadgets-life-of-students-in-lockdown-72962>
- Chen, T., Peng, L., Yin, X., Rong, J., Yang, J., & Cong, G. (2020). Analysis of user satisfaction with online education platforms in China during the COVID-19 pandemic. *Healthcare*, 8(200), 1-26. <https://doi.org/10.3390/healthcare8030200>
- Chizmar, J. F., & Walbert, M. S. (1999). Web-based learning environments guided by principles of good teaching practice. *The Journal of Economic Education*, 30(3), 248-259.  
<https://doi.org/10.1080/00220489909595985>
- Chonghui, L. (2020, 05 April). Burnout among students on the rise. *The Star*  
<https://www.thestar.com.my/news/education/2020/04/05/burnout-am05>
- Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst COVID-19. *Asian Journal of University Education*, 16(2), 46-58. <https://eric.ed.gov/?id=EJ1267359>
- Clover, I. (2017). *Advantages and disadvantages of eLearning*. eLearning Industry. Retrieved 12 August, 2020 from <https://elearningindustry.com/advantages-anddisadvantages-of-elearning>
- Cooper, N. (2018). *Does Your Home Environment Affect Your Ability to Learn?* NCC Home Learning. Retrieved April 13 from <https://www.ncchomelearning.co.uk/blog/does-your-home-environment-affect-your-ability-to-learn/>
- Dzakiria, H. (2012). Illuminating the importance of learning interaction to open distance learning (ODL) success: A qualitative perspectives of adult learners in Perlis, Malaysia. *European Journal of Open, Distance and E-learning*. <https://eric.ed.gov/?id=EJ992489>
- Dzakiria, H., & Christopher, A. A. (2010). *Interaction issues in Malaysia open distance learning (ODL)* Commonwealth of Learning. Learning for Sustainable Development, Pan-Commonwealth Forum 6 (PCF6), 2010. <http://hdl.handle.net/11599/2131>
- Dzakiria, H., Idrus, R. M., & Atan, H. (2005). Interaction in open distance learning: Research issues in Malaysia. *Malaysian Journal of Distance Education*, 7(2), 63-77.  
[http://mjde.usm.my/vol7\\_2\\_2005/mjde7\\_2\\_5.pdf](http://mjde.usm.my/vol7_2_2005/mjde7_2_5.pdf)
- Dzakiria, H., Kasim, A., Mohamed, A. H., & Christopher, A. A. (2013). Effective learning interaction as a prerequisite to successful open distance learning (ODL): A case study of learners in the northern state of Kedah and Perlis, Malaysia. *Turkish Online Journal of Distance Education*, 14(1), 111-125.  
<https://dergipark.org.tr/en/pub/tojde/issue/16895/176018>
- Dzakiria, H., & Walker, R. (2003). Understanding the culturally diverse Malaysian distance learners: Does culture has a role and an effect on learning and practice in distance education. *Malaysian Journal of Distance Education*, 5(1), 95-107.  
<http://repo.uum.edu.my/id/eprint/19866>

- Dziuban, C., Moskal, P., Thompson, J., Kramer, L., DeCantis, G., & Hermsdorfer, A. (2015). Student satisfaction with online learning: Is it a psychological contract? *Online Learning*, 19(2). <https://files.eric.ed.gov/fulltext/EJ1062943.pdf>
- EdGlossary. (2013, 29 August 2013). *Learning environment*. Retrieved 25 January 2021 from <https://www.edglossary.org/learning-environment/>
- Eduations.com. (2020). *Online learning - What is it and how does it work?* Retrieved 15 July 2021 from <https://www.educations.com/study-guides/study-online/>
- Elmer, T., Mephram, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *Plos one*, 15(7), 5.279.271-275.279.210. <https://doi.org/10.1371/journal.pone.0236337>
- Embibe. (2021). *10 online learning challenges and how to overcome these problems*. Retrieved 27 April 2021 from <https://www.embibe.com/exams/online-learning-challenges-and-solutions/>
- Endut, A., Isa, P. M., Aziz, S. R. A., Jono, M. N. H. H., & Aziz, A. A. (2012). e-Learning for Universiti Teknologi MARA Malaysia (UiTM): Campus wide implementation and accomplishments. *Procedia-Social and Behavioral Sciences*, 67, 26-35. <https://doi.org/10.1016/j.sbspro.2012.11.304>
- Englehart, J. M. (2009). Teacher–student interaction. In *International handbook of research on teachers and teaching* (pp. 711-722). Springer. [https://doi.org/10.1007/978-0-387-73317-3\\_44](https://doi.org/10.1007/978-0-387-73317-3_44)
- Friedman, J. (2020). *Tackle challenges of online classes due to COVID-19*. US News. <https://www.usnews.com/education/best-colleges/articles/how-to-overcome-challenges-of-online-classes-due-to-coronavirus>
- Goi, C., & Ng, P. Y. (2008). E-learning in Malaysia: Success factors in implementing e-learning program. *International Journal of Teaching and Learning in Higher Education*, 20(2). [http://library.oum.edu.my/oumlib/sites/default/files/file\\_attachments/odl-resources/4321/elearning-malaysia.pdf](http://library.oum.edu.my/oumlib/sites/default/files/file_attachments/odl-resources/4321/elearning-malaysia.pdf)
- Hair, J. F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis: A Global Perspective* (7<sup>th</sup> ed.). Pearson Education.
- Hara, N., & Kling, R. (2001). Student distress in web-based distance education. *Educause Quarterly*, 24(3), 68-69. <https://doi.org/10.1080/13691180010002297>
- Hashim, R., Ahmad, H., & Ahmad, N. A. (2010). *Measuring andragogy: A case of e-PJJ students at InED, UiTM* 2010 International Conference on Science and Social Research (CSSR 2010), 5-7 December 2010, Kuala Lumpur. <https://ieeexplore.ieee.org/document/5773753/authors#authors>
- Hashim, S. (2021, January 22). [@sobabest] Yeap. My performance went downhill since ODL. Different people different situation. I can't imagine my next semester if it's still ODL [Tweet]. In: Twitter. <https://twitter.com/sobabest/status/1352486674459107329?s=20>.
- Hassan, H. (2020, 17 March). Malaysia bans travel abroad, shuts schools and businesses over coronavirus spread; lockdown till March 31. *Straits Times*. <https://www.straitstimes.com/asia/se-asia/malaysia-to-impose-lockdown-from-wednesday-to-march-31>
- Headspace. (n.d.). *Face to face vs. online learning*. Retrieved 15 December 2020 from <https://headspace.org.au/young-people/face-to-face-vs-online-learning/>

- Holslin, P. (2021). *This is why your internet slows down at night*. Highspeedinternet.  
<https://www.highspeedinternet.com/resources/why-does-my-internet-slow-down-at-night>
- Hornbæk, K., & Oulasvirta, A. (2017). *What is interaction?* Conference on Human Factors in Computing Systems, 6-11 May 2017, Denver, US.  
<https://dl.acm.org/doi/abs/10.1145/3025453.3025765>
- IGIGlobal. (n.d.). *What is e-learning platform?* Retrieved 28 February 2021 from  
<https://www.igi-global.com/dictionary/e-learning-platform/8801>
- Ilias, A., Baidi, N., Ghani, E. K., & Razali, F. M. (2020). Issues on the Use of Online Learning: An Exploratory Study Among University Students During the COVID-19 Pandemic. *Universal Journal of Educational Research*, 8(11), 5092-5105.  
<https://doi.org/10.13189/ujer.2020.081109>
- ION Professional ELearning Programs. (n.d.). *Strengths and weaknesses of online learning*. University of Illinois Springfield. Retrieved 24 May 2021 from  
<https://www.uis.edu/ion/resources/tutorials/online-education-overview/strengths-and-weaknesses/>
- Ismail, N., Mazlina, N., Wafa, S., Syed, W., Wafa, S., & Thompson, J. (2020). Online learning challenges during pandemic COVID-19 in Malaysian higher learning institution. *Universal Journal of Educational Research*, 8(12), 7151-7159.  
<https://www.hrpub.org/download/20201130/UJER82-19591512.pdf>
- Johnson, D. W. (1981). Student-student interaction: The neglected variable in education. *Educational Researcher*, 10(1), 5-10. <https://doi.org/10.3102%2F0013189X010001005>
- Kadar, R., Johan, E. J., & Bakar, M. S. A. (2020). e-Content development and delivery for virtual classroom. *Creative and Innovative Teaching Practices During Covid-19 Movement Control Order*, 1, 59-65. [https://appspenang.uitm.edu.my/buletin%20jskm/2020-2/TeachingCreativityAndInnovationDuringMCO-Covid-19\\_Volume1\\_Sep2020.pdf#page=64](https://appspenang.uitm.edu.my/buletin%20jskm/2020-2/TeachingCreativityAndInnovationDuringMCO-Covid-19_Volume1_Sep2020.pdf#page=64)
- Kapasia, N., Paul, P., Roy, A., Saha, J., Zaveri, A., Mallick, R., . . . Chouhan, P. (2020). Impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic in West Bengal, India. *Children and Youth Services Review*, 116, 105194. <https://doi.org/10.1016/j.childyouth.2020.105194>
- Karim, M. A. (2020, 22 April). UiTM moves to online learning mode. *New Straits Times*.  
<https://www.nst.com.my/education/2020/04/586565/uitm-moves-online-learning-mode>
- Kelly, A., Garber-Pearson, R., & Vanini, S. (2020). *Why choose asynchronous?* University of Washington. <https://teachingremotely.washington.edu/2020/08/25/why-choose-asynchronous/>
- Kilburn, A., Kilburn, B., & Cates, T. (2014). Drivers of student retention: System availability, privacy, value and loyalty in online higher education. *Academy of Educational Leadership Journal*, 18(4), 1-14.  
<https://www.proquest.com/openview/3faa650708d7537d760537ade19a57e0/1?pq-origsite=gscholar&cbl=38741>
- Krishnamurthi, M. (2000). *Enhancing student-teacher interactions in internet-based courses*. 2000 Annual Conference, St. Louis, Missouri, 18-21 June 2000.  
<https://www.semanticscholar.org/paper/Enhancing-student-teacher-interactions-in-courses-Krishnamurthi/4e7a56667fb7ed625b540b4d79ce1d4ccc929cc6>

- Kwaske, I., & McLennan, K. (n.d.). *Why social interaction is important in online learning?* Tulane University. <https://sopa.tulane.edu/blog/why-social-interaction-important-online-learning>
- Latiff, L. A., Aziz, A. A., Ismail, A., & Mokhsin, M. (2019). InSIDE: A model for interactive and immersive synchronous media in MOOC courses. *Indonesian Journal of Electrical Engineering and Computer Science*, 16(1), 456-464. <https://doi.org/10.11591/ijeecs.v16.i1.pp456-464>
- Lee, S. (2020, 14 April 2020). *Poor Internet connections, no computers hinder online learning in Sabah*. TheStar. Retrieved 23 June 2021 from <https://www.thestar.com.my/news/nation/2020/04/14/poor-internet-connections-no-computers-hinder-online-learning-in-sabah>
- Li, C., & Lalani, F. (2020). *The COVID-19 pandemic has changed education forever. This is how*. World Economic Forum. Retrieved 25 January 2021 from <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/>
- Lim, I. (2020, 30 May). Reality for Malaysia's university students: Online learning challenges, stress, workload; possible solutions for fully digital future until Dec. *Malay Mail*. <https://www.malaymail.com/news/malaysia/2020/05/30/reality-for-malysias-university-students-online-learning-challenges-stress/1870717>
- Lindblom-Ylänne, S., Pihlajamäki, H., & Kotkas, T. (2003). What makes a student group successful? Student-student and student-teacher interaction in a problem-based learning environment. *Learning environments research*, 6(1), 59-76. <https://doi.org/10.1023/A:1022963826128>
- Maktab Adabi Maharani Online. (n.d.). *MAM Online*. Retrieved 12 April from <https://maktabadabi.com/>
- Mathew, V. N., & Chung, E. (2020). University students' perspectives on open and distance learning (ODL) implementation amidst COVID-19. *Asian Journal of University Education*, 16(4), 152-160. <https://doi.org/10.24191/ajue.v16i4.11964>
- Mehta, R., Zhu, R., & Cheema, A. (2012). Is noise always bad? Exploring the effects of ambient noise on creative cognition. *Journal of Consumer Research*, 39(4), 784-799. <https://doi.org/10.1086/665048>
- Michael, C. P., & Igenewari, L. S. (2018). The Impact of Computer Literacy among Secondary School Teachers in Rivers State. *International Journal of Education and Evaluation ISSN 2489-0073 Vol. 4 No, 1*. <https://iiardpub.org/get/IJEE/VOL.%204%20NO.%201%202018/THE%20IMPACT%20OF%20COMPUTER.pdf>
- Michigan State University. (2020). *Poor Internet connection leaves rural students behind*. Retrieved 23 June 2021 from <https://msutoday.msu.edu/news/2020/poor-internet-connection-leaves-rural-students-behind>
- Minderhout, V. (n.d.). *Identifying learner needs. Faculty guidebook: A comprehensive tool for improving faculty performance*. Chemistry, Seattle University. [http://www.pcrest.com/research/fgb/3\\_2\\_6.pdf](http://www.pcrest.com/research/fgb/3_2_6.pdf)
- Muda, S., & Yee, B.-L. (2019). *Perceived challenges in open and distance learning among nursing students of Open University Malaysia: A descriptive analysis* International Conference on Education (ICE 2019), 10-11 April 2019, Kuala Lumpur. <http://library.oum.edu.my/repository/id/eprint/1190>
- Musingafi, M. C., Mapuranga, B., Chiwanza, K., & Zebron, S. (2015). Challenges for open and distance learning (ODL) students: Experiences from students of the Zimbabwe Open

- University. *Journal of Education and Practice*, 6(18), 59-66.  
<https://eric.ed.gov/?id=EJ1079750>
- Mwenje, S., & Saruchera, K. (2013). Assessing student support services quality in open and distance learning (ODL): A learner perspective at Zimbabwe Open University (ZOU)-Manicaland Region. <http://garj.org/full-articles/assessing-student-support-services-quality-in-open-and-distance-learning-odl-a-leaner-perspective-at-zimbabwe-open-university-zou-manicaland-region.pdf?view=inline>
- Nassr, R. M., Aborujilah, A., Aldossary, D. A., & Aldossary, A. A. A. (2020). Understanding education difficulty during COVID-19 lockdown: Reports on Malaysian university students' experience. *IEEE Access*, 8, 186939-186950.  
<https://doi.org/10.1109/ACCESS.2020.3029967>
- Nguyen, N. D. (2009). Teacher-learner interactions in online learning at the Center for Online and Distance Training, Travinh Univerisity, Vietnam. <http://hdl.handle.net/10125/7968>
- Othman, J., Kadar, R., Umar, N., & Ahmad, N. (2020). Covid-19 pandemic effects in teaching and learning methods during Movement Control Order. *SIG CS@e-LEARNING*, 1(September), 1-13. [https://appspenang.uitm.edu.my/buletin%20jskm/2020-2/TeachingCreativityAndInnovationDuringMCO-Covid-19\\_Volume1\\_Sep2020.pdf#page=49](https://appspenang.uitm.edu.my/buletin%20jskm/2020-2/TeachingCreativityAndInnovationDuringMCO-Covid-19_Volume1_Sep2020.pdf#page=49)
- Palloff, R. M., & Pratt, K. (2002). *Lessons from the cyberspace classroom*. Wiley.  
<https://www.ascilite.org/conferences/melbourne01/pdf/papers/bunkera.pdf>
- Pennings, H. J., Brekelmans, M., Sadler, P., Claessens, L. C., van der Want, A. C., & van Tartwijk, J. (2018). Interpersonal adaptation in teacher-student interaction. *Learning and Instruction*, 55, 41-57. <https://doi.org/10.1016/j.learninstruc.2017.09.005>
- Pham, L., Limbu, Y. B., Bui, T. K., Nguyen, H. T., & Pham, H. T. (2019). Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam. *International Journal of Educational Technology in Higher Education*, 16(1), 1-26.  
<https://doi.org/10.1186/s41239-019-0136-3>
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, 2(3), 923-945.  
<https://doi.org/10.1007/s42438-020-00155-y>
- Ratcliff, B. (2001). Online Course Assessment.  
[https://www2.southeastern.edu/Academics/Faculty/elejeune/internet\\_student\\_opinion.htm](https://www2.southeastern.edu/Academics/Faculty/elejeune/internet_student_opinion.htm)
- Rochester Institute of Technology. (n.d.). *Student-To-Student Interaction Online*. Retrieved 25 January 2021 from <https://www.rit.edu/academicaffairs/tls/course-design/teaching-elements/student-to-student>
- Rozaidee, A. (2021). 2 UiTM Students Died Over The Weekend Due To Ruptured Blood Vessels. Says. <https://says.com/my/news/2-uitm-students-died-over-the-weekend-due-to-ruptured-blood-vessels>
- Safri, S. N., Mohi, Z., & Hanafiah, M. H. M. (2020a). *Conceptualization of MOOC e-learning service quality dimensions in Faculty of Hotel and Tourism Management, UiTM, Malaysia* 3rd Asia Pacific International Conference of Management and Business Science (AICMBS 2019),
- Safri, S. N. W., Mohi, Z., & Hanafiah, M. H. (2020b). Massive Open Online Course (MOOC): Our saviour during COVID-19 pandemic? *Journal of Tourism, Hospitality & Culinary Arts*, 12(1), 222-230. [https://fhtm.uitm.edu.my/images/jthca/Vol12Issue1/Chap\\_14.pdf](https://fhtm.uitm.edu.my/images/jthca/Vol12Issue1/Chap_14.pdf)

- Salmi, L. (2013). Student Experiences on Interaction in an Online Learning Environment as Part of a Blended Learning Implementation: What Is Essential? *International Association for Development of The Information Society*. <https://eric.ed.gov/?id=ED562301>
- Samat, M. F., Awang, N. A., Hussin, S. N. A., & Nawawi, F. A. M. (2020). Online distance learning amidst Covid-19 pandemic among university students. *Asian Journal of University Education*, 16(3), 220-233. <https://doi.org/10.24191/ajue.v16i3.9787>
- Segoe, B. (2014). *Peer support: The traits and perceptions of open distance learning (ODL) students*. Bulgarian Comparative Education Society, Annual International Conference of the Bulgarian Comparative Education Society (BCES), Sofia and Nessebar, Bulgaria, 12<sup>th</sup> Jun 2014. <https://files.eric.ed.gov/fulltext/ED598045.pdf>
- Shah, A. U. M., Safri, S. N. A., Thevadas, R., Noordin, N. K., Abd Rahman, A., Sekawi, Z., . . . Sultan, M. T. H. (2020). COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. *International Journal of Infectious Diseases*, 97, 108-116. <https://doi.org/10.1016/j.ijid.2020.05.093>
- Shahril, A. M., Tarmudi, S., Hamid, R., & Mohi, Z. (2019). Interactive knowledge experience: Encouraging student using quick response code in higher learning institution in Malaysia. *International Journal of Management Sciences and Business Research*, 8(5), 73-78.
- Simpson, O. (2013). *Supporting students in online open and distance learning*. Routledge. <https://doi.org/10.4324/9780203062395>
- Tan, T. (2020, 30 December). Syed Saddiq shaves head after charity fundraising meets target. *TheStar*. <https://www.thestar.com.my/news/nation/2020/12/30/syed-saddiq-shaves-head-after-charity-fundraising-meets-target>
- Twigg, C. A. (2001). Quality assurance for whom. *Providers and Consumers in Today's Distributed Learning Environment*. New York: Centre for Academic Transformation. Rensselaer Polytechnic Institute. <http://www.center.rpi.edu/PewSym/Mono3.pdf>.
- UC Berkeley. (n.d.). *What is course content?* Retrieved 15 September, 2020 from <https://accesscontent.berkeley.edu/faq/general/what-course-content>
- Wahab, N. A., Mohammad, W. A. W., Mydin, A. M., & Yusoff, S. A. M. (2021). Favoured instructional methods and teaching materials for Online Distance Learning (ODL) lectures on interactive multimedia course. *SIG CS@ e-LEARNING*(August), 63-70. [https://appspenang.uitm.edu.my/buletin%20jskm/2021-2/Articles/FAVOURED%20INSTRUCTIONAL%20METHODS%20AND%20TEACHIING%20MATERIALS%20FOR%20ONLINE%20DISTANCE%20LEARNING%20\(ODL\).pdf](https://appspenang.uitm.edu.my/buletin%20jskm/2021-2/Articles/FAVOURED%20INSTRUCTIONAL%20METHODS%20AND%20TEACHIING%20MATERIALS%20FOR%20ONLINE%20DISTANCE%20LEARNING%20(ODL).pdf)
- Wang, M. (2004). Correlational analysis of student visibility and performance in online learning. *Journal of Asynchronous Learning Networks*, 8(4), 71-82. <https://doi.org/10.24059/olj.v8i4.1811>
- Whipp, J. L., & Chiarelli, S. (2004). Self-regulation in a web-based course: A case study. *Educational technology research and development*, 52(4), 5. <https://www.learntechlib.org/p/67691/>
- Yee, C. P. (2020). COVID-19: Impact on the tertiary education sector in Malaysia. *Crisis Assessment, Penang Institute, Pulau Pinang, Malaysia, Tech. Rep.* <https://penanginstitute.org/publications/covid-19-crisis-assessments/covid-19-impact-on-the-tertiary-education-sector-in-malaysia/>
- Zahari, S. (n.d.). Switching to eLearning due to COVID-19: UiTM Open Distance Learning (ODL) practice and experience. <https://ingka.uitm.edu.my/images/stories/COMM/WebD3/INQKA-Prof-Salehuddin.pdf>

- Zain, R. M., & Rahman, N. A. (2021). *UiTM expresses condolences to families of 2 students who died recently*. News Strait Times.  
<https://www.nst.com.my/news/nation/2021/07/707210/uitm-expresses-condolences-families-2-students-who-died-recently>
- Zakaria, B. K. (2017, 26 December). Berakhirnya kecemerlangan Maktab Adabi Maharani. *BH Online*. <https://www.bharian.com.my/berita/nasional/2018/01/367740/berakhirnya-kecemerlangan-maktab-adabi-maharani>
- Zakaria, N. (2020, 6 October). Confidence rising with open distance learning. *New Straits Time*.  
<https://www.nst.com.my/opinion/letters/2020/10/630010/confidence-rising-open-distance-learning>