

Diploma Engineering Students' Perceptions of Online Distance Learning



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Abstract: *The Covid-19 pandemic and the subsequent Movement Control Order (MCO) has resulted all formal classroom learning for 4.9 million students at all levels of education in Malaysia was suspended since March 2020 till to-date. Educators were advised to shift from traditional face-to-face classroom meetings to distance learning mode; online or offline platforms. However, the reality is, the majority of the students are still grappling with e-learning, inadequate equipment, and an uncondusive environment making the adoption of home-based e-learning even harder. There is no evidence on how Diploma engineering students are experiencing this new normal. Having realised the importance of getting first-hand information regarding online distance learning (ODL) experiences, this study investigated Diploma engineering students' ODL experiences amidst COVID-19. An online survey using Google Forms was utilised to collect data for three weeks from 486 Diploma level students in a university from the southern region of Peninsular Malaysia. Using descriptive quantitative and qualitative analysis, the distribution of study participants, learning experiences, and expectations on educational decisions of ODL was investigated. The findings highlight the need to transform education for more tech-based lessons for the millennials and there is a need to a properly planned ODL implementation with full support from all involved in ODL mode. As classes move online in the foreseeable future, the findings of this project will benefit UiTM and the government in restructuring digital education post-Covid-19 to develop employability and the productivity of the future generation.*

Keywords: *Online Distance Learning (ODL); Students' Perceptions; Covid-19 Pandemic, E-Learning*

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I. INTRODUCTION

The coronavirus disease (COVID-19) was declared as 'pandemic' by the World Health Organization (WHO) on 11 March 2020 resulting countries around the globe to impose lockdown, social and physical distancing, and avoiding face-to-face teaching and learning to curb the spread of this highly contagious disease (WHO, 2020; Gonzalez et al. 2020; Pelmin, 2020). Malaysia, like many countries around the world, enforced the Movement Control Order (MCO), Conditional Movement Control Order (CMCO) and Recovery Movement Control Order (RMCO) at different levels to flatten the curve of the spread of Covid-19 for almost a year.

The unprecedented changes as a result of the Covid-19 pandemic have hit students and lecturers in higher education institutions intensely as all teaching and learning activities has to be conducted virtually (Sim, Sim, & Quah, 2021; Chung, Mohamed Noor & Mathew, 2020). Many prestigious universities around the world have completely embraced online learning as a way of maintaining educational continuity. The Ministry of Higher Education declared that all Malaysian public and private universities have to conduct teaching and learning activities through online learning until the end of December 2020 (Malaysian Ministry of Higher Education, 2020), which was later announced to continue until the first quarter of 2021.

Different modes of delivery have grown into online distance learning (ODL), such as online learning, open learning, web-based learning, computer-mediated learning, blended learning and m-learning. Online distance learning is viewed as learning interactions using various devices (e.g. cell phones, tablets, etc.) with internet connectivity in synchronous or asynchronous environments (Singh & Thurman, 2019). Within two weeks, lectures, assignments, group work, presentations and assessments were all planned and carried out with the assistance of technology. There are many studies looking into the efficacy of implementing ODL (Vitoria, Mislinawati Nurmasiyah, 2018, Aggarwal, Comyn & Fonseca, 2020) and resulted many universities promoting and encouraging online distance learning even before the pandemic. ODL offers flexibility, time saving, ease of use, and better control of the environment (Paul & Jefferson, 2019). However, in spite of all the benefits, the reality is, majority of the students are still grappling with e-learning, inadequate equipment, and an uncondusive environment making the adoption of home-based e-learning even harder. (Sim, Sim, & Quah, 2021).



This study is underpinned by online distance learning theory focusing specifically on the limitations of online learning from the perceptions of the students. It is important to investigate the limitations of ODL from the students' perspective so as to improve the quality of teaching and learning in this new normal for education sector. Most past studies reported ODL in terms of students' experiences in relation to undergraduates or postgraduates. Very little was investigated on Diploma course students' perceptions of ODL. When ODL has been implemented fully for almost a year, majority of the Diploma students have just embarked into tertiary education. This transformation from secondary school education to tertiary level education and from face-to-face traditional learning to ODL surely would have impacted the students. Thus, this paper investigated the Diploma course students' perceptions of ODL mode amidst COVID-19. Besides, the expectations of the students on the educational decisions of ODL was also explored.

Research Questions

This study addressed the following research questions:

1. What are the perceptions of the Diploma engineering course students in relation to their learning status on ODL during Covid-19 pandemic?
2. What are the expectations of the Diploma engineering course students on the educational decision of ODL during Covid-19 pandemic?

II. LITERATURE REVIEW

Online Distance Learning

As has been previously reported in the literature, there are many definitions and interpretations of Online Distance Learning (ODL). Some define as distance learning, others as e-Learning, and online learning environments (Moore, 2010). Based on the Transactional Distance Theory by Moore (1980), distant learning is when the instructional delivery from an instructor who is physically located in a different place from the learner providing the instruction at disparate times. The term e-Learning most likely originated during the 1980's though some are not certain, with conflicting views of the term. Tavangarian et al. (2004) included the constructivist theoretical model as a framework for many earlier definitions by Ellis (2005), Nichols (2003), Benson (2002), and Clark (2002), of that e-Learning is not only procedural but also shows some transformation of an individual's experience into the individual's knowledge through the knowledge construction process.

Online learning, on the other hand can be the most difficult to define compared to the counterparts. Some studies distinguish the variance by describing online learning as "wholly" online learning (Oblinger, Oblinger & Lippincott, 2005), while others relate to technology as the medium it is used (Lowenthal, Wilson, & Parrish, 2009). Most studies describe as access to learning experiences via the use of some technology (Benson, 2002; Carliner & Boswood, 2004; Conrad, 2002) and further discussed as not only the accessibility of online learning but also its connectivity, flexibility and ability to promote varied interactions (Ally, 2004; Hiltz & Turoff, 2005; Oblinger & Oblinger, 2005).

Thus, it is clear that the terms are often interchanged, and the commonalities found in all the definitions are that some form of instruction occurs between two parties (a

learner and an instructor), it is held at different times and/or places and uses varying forms of instructional materials.

Theories Related to ODL

Seminal contributions have been made by several theories to ODL, Constructivism Theory promotes autonomous learning in which learners are active constructors of knowledge meaning and they construct understanding through their own learning experience (Wang, 2014). This was later further developed by John Dewey who stated that learning is a set of practical social experiences and in the process, learners learn by doing, collaborating, and reflecting with others (Picciano, 2017).

Similarly, in more recent years, where online learning has become prominent, Online Collaborative Learning (OCL) theory proposes collaborative learning, knowledge building and the internet usage in reconstructing formal, non-formal and informal education (Harasim, 2012). The concept of the facilitator (teacher) should be in charge of the knowledge building process and the three phases of knowledge construction; idea generating, idea organizing and intellectual convergence, received a great deal of discussion and interaction among the social community members. Reviewing major learning theories help to scaffold the selected literature to understand the focus of the current study.

Students' Perceptions of ODL

A large number of existing studies in the broader literature have examined students' perceptions of ODL ever since the spread of Covid-19 pandemic and the closure of physical classes (Mathew & Chung, 2021; Sim, Sim, & Quah, 2021; Demuyakor, 2020; Khan, Vivek, Khojah & Tahir, 2021; Singh & Thurman, 2019; Lau & Shaikh, 2012; Lee, 2020).

Mathew and Chung (2021) conducted a comparison study to a total of 608 diploma and degree university students throughout Malaysia using convenient sampling method investigating perspectives on ODL amidst COVID-19. The study stated that some students have positive perceptions on ODL implementation while others indicated that ODL should not be continued in the future semester, due to problems such as poor internet connection, budget constraints and time management issues.

Sim, Sim, and Quah (2021) investigated the level of acceptance, factors and challenges of online learning among 156 university students in the state of Sarawak. Results showed that students have moderate high level of acceptance of online learning; while enthusiasm, self-efficacy, satisfaction and enhancement of English language skills were the four main factors that facilitated learning. However, the speed of teaching and learning delivery, students' attitude, struggles and stress were among the stated challenges of online learning.

Demuyakor (2020) in a study covering 360 Ghanaian international students showed that students perceived online learning as beneficial. Most of them strongly agreed to the effectiveness of online learning and they were also satisfied with the learning resources used online as compared to those from their conventional classes.



Another study of 184 university students of the National Capital Territory (NCT) of Delhi revealed that students experience a feeling of freedom and connected with their teachers during ODL mode. It was noted that, flexible learning mode and time of study period benefit individuals of different types of learning styles. In fact, it was found that over half of the total number of respondents are comfortable with learning in an online platform; though they are away from any physical interaction (Khan, Vivek, Khojah & Tahir, 2021; Singh & Thurman, 2019). In fact, findings also revealed that the majority of the students have positive perceptions towards e- learning and the effectiveness of the communication between educators and students without any face-to face interaction. This is because the fast responses that students receive during online learning discussions acts as a 'catalyst' in the learning process (Khan, Vivek, Khojah & Tahir, 2021).

Another similar study was conducted by Sit, Chung, Chow and Wong (2005) towards 198 nursing students in Hong Kong revealed that students felt ODL is convenient because they could decide their own learning and felt responsible towards their studies. Lau and Shaikh (2012) in a study found that students' computer and internet efficacy, and personal characteristics such as gender, ethnicity, course year level, and financial aid status are the factors contributing to the students' online learning readiness.

Another similar study reported that about 52% of students in Sabah, Malaysia do not have the access to the internet due to the inadequate online learning infrastructures and limited accessibility to the internet (52 Peratus, 2020). This makes the students experience difficulty in communicating with lectures, interaction with friends, and laboratory access. Lee (2020) highlighted that students in rural areas of Malaysia perceive ODL as hard due to the limited accessibility to the internet and this affect their studies.

Besides, studies also revealed that factors such as age, gender, prior knowledge of computer literacy and the preferred learning styles of individuals contribute towards technology acceptance among students as the more knowledgeable they are about technology, the more receptive they would be of their online learning classes (Demuyakor, 2020; Bali & Liu, 2018).

There are also other studies investigating ODL in various perspectives. Some other drawbacks stated were inefficacy of internet connections and support technology for students and staff (Rasheed, Amirrudin & Nor Aniza, 2020; Anderson & Perrin, 2018; Chuang, Weng, & Chen, 2018), lack of interaction with lecturers and peers (Vanslambroucka, Zhu, Lombaerts, Philipsen, & Tondeur, 2018; Bali & Liu, 2018) and increased stress and study load (Vanslambroucka, Zhu, Lombaerts, Philipsen, & Tondeur, 2018; Ravi, 2014).

A closer look to the literature on the perceptions of students' learning experience on ODL, however, reveals a number of gaps and shortcomings. Not many studies have investigated how students who embarked to tertiary level education after secondary school traditional face-to-face learning perceive ODL, in this case Diploma course students. Besides, most of the studies only focused on quantitative research method. In order to properly address this question, more studies needed to investigate students' experiences during Covid-19 in the context of Malaysia, especially for Diploma course students. Thus, the aim of this

paper is to study the perceptions of the Diploma course students' learning experiences in relation to their learning status and expectations on the educational decisions of ODL during Covid-19 in Malaysia. The findings provide insight to the educators, curriculum designers, universities and the government in assisting the implementation of ODL in Malaysian universities.

III. METHODOLOGY

The research methodology for the current study embarked upon receiving approval from the Research Ethics Committee of the University. The target population of this research was all the Diploma course students in Universiti Teknologi MARA Johor, Pasir Gudang Campus. The total population of all Diploma engineering course students was 1490. Based on Krejcie and Morgan's (1970) Table of Sample Size, a minimum of 306 participants should be targeted as samples of the study. However, since the study utilised random sampling method and the questionnaire was distributed online using Google Forms through WhatsApp groups and email for data collection, 486 responses were received. Therefore, the number of sample size of this study is sufficient to represent the population.

The instrument of this study was adapted from Bączek, et al.,(2021); Selvanathan, Hussin, and Azazi, (2020); and Kapasia, et al., (2020). The questionnaire consists of 30 items all together with five sections which are Demographics information, Online Distance Learning Mode Experience, Synchronous and Asynchronous Learning Experience, ODL Learning Environment and ODL in the future with the Cronbach alpha of 0.57, 0.78, 0.77, 0.58, and 0.83, respectively. The scale was based on a 5-point Likert scale with 1 as the lowest end and 5 as the highest end. 2 items of the questionnaire covered demographics, one item was to determine the gender and their course of study in their Diploma course, 5 questions studied the ODL learning mode of the participants which covered the choice of gadgets and mode of assignment submission, 10 questions on the synchronous and asynchronous learning experiences, 8 questions investigated their ODL learning environment and finally 6 questions on their expectations for future learning using ODL. There were also 2 open-ended questions related to ODL mode experience and future expectations to allow students to express perceptions freely.

Using the formula below in Microsoft Excel, the internal consistency of the items were calculated and a Cronbach alpha value of 0.78 was achieved which indicates an acceptable consistency of the items in the questionnaire (Taber, 2018).

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum V_i}{V_t} \right)$$

The questionnaire was distributed through email and students' WhatsApp groups by the English lecturers in the department for the collection of data. Written informed consent was also taken from the participants.



Diploma Engineering Students' Perceptions of Online Distance Learning

Descriptive statistics were carried out to understand the distribution of study participants. Simple frequencies and percentages were computed for the analysis of mode of learning, learning environment and opinion on the future of ODL. Results are presented in the form of charts and tables in the following sections.

IV. RESULTS

Characteristics of Respondents

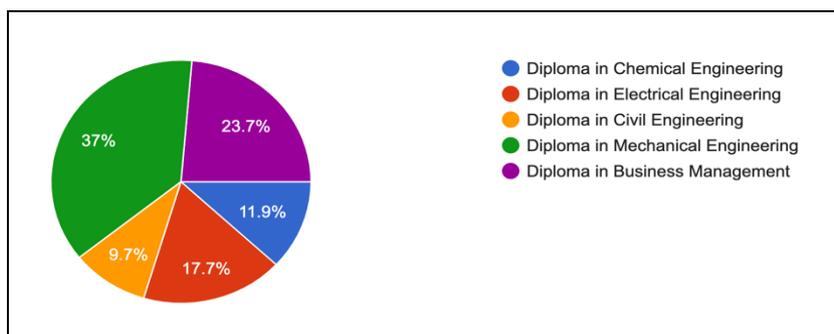
The characteristics of the Diploma course students are summarized below. Table 1 presents the distribution of gender and Figure 1 highlights the respective courses of the respondents.

Table 1 Types of Distribution of Gender

Gender	n	Percentage (%)
Male	278	57.2
Female	208	42.8

Based on Table 1, among 486 students, 57.2% (n=278) were male and 42.8% (n=208) were females. While Figure 1 below shows that the majority of the respondents were from the Diploma of Mechanical Engineering (37%), followed by Diploma in Business Management (23.7%), Diploma in Electrical Engineering (17.7%), Diploma in Chemical Engineering (11.9%) and only 9.7% students of Diploma in Civil Engineering.

Figure 1 Distribution of Courses



Online Distance Learning Status

Table 2 below presents some background information of the respondents ODL learning mode status. Five questions

were investigated to gauge the respondents' background information related to the ODL mode

Table 2 ODL Learning Mode

1. Platforms used for ODL		%
Zoom		2.8
Google Meet		52.7
Padlet		7.4
Microsoft Teams		24.4
YouTube		6.9
Other platforms (Telegram, Google Classroom, Webex, Skype, WhatsApp, UFuture)		5.8
2. Attend all the online classes that lecturers conduct		
Yes		92.4
Sometimes		5.6
No		2.0
3. Gadgets used to attend to online classes		
Android mobile phone		23
iPhone		9
Laptop		66
Personal Computer		1.3
iPad		0.5
Friends' laptop		0.2
4. Mode used for submission of assignment		
Google Drive		36
Microsoft Teams		39
YouTube		2



WhatsApp	12
Telegram	4
Padlet	3
Other platforms (Google Classroom, Instagram, Email)	4
5. Whose technological gadgets used for ODL?	
Own	93.6
Parents	3.8
Other family members	2.6
Hired from neighbours	0
Friends	0

Based on Table 2 above, five questions were asked to understand students' ODL mode during Covid-19 pandemic. Firstly, it was noted that 52.7 percent of the students used Google Meet as their main platform to interact with lecturers and peers. This is followed by Microsoft Teams (24.4%) and YouTube (6.9%). The least preferred was Zoom with only 2.8 percent. This is in contrast with the findings of Mathew & Chung (2021) where they found that Google classroom and YouTube were more favourable to Diploma and Degree students.

Secondly, it was important to note whether students attended all the ODL classes that the lecturers conducted. It was evident that majority of the students (92.4%) attended all the classes conducted by their lecturers. However, it was a surprise to note that 2 percent of the respondents did not attend to classes conducted by their lecturers.

The third and fifth questions were about the gadgets used in ODL. It was reported that the most frequent gadgets used by the respondents for ODL were laptops (66%) and android

mobile phones (23%). 93.6 percent reported that the gadgets they used were their own, followed by 3.8 percent were using their parents' and another 2.6 percent used gadgets that belong to other family members.

The fourth question was about the mode for assignment submission in ODL. Even though the main platform used for learning was Google Meet, the students submitted their assignments mainly on Microsoft Teams (39%). Only 36 percent reported that they submitted their assignment through Google Drive and the least frequent mode used for submission was YouTube (2%).

Expectations on Educational Decisions of ODL

It is vital to investigate the perceptions of the students regarding their expectations on the educational decisions of ODL during the Covid-19 pandemic. The last section of the questionnaire tempted to find out how students perceive ODL in the future and Table 3 below presents the results.

Table 3 Participants Expectations on Educational Decisions of ODL

Expectations of ODL in the future	(n)	%
ODL should not be continued in the future	60	23.3
ODL helps to shape me into a better person	16	6.2
Lecturers should give extra consideration with the students	10	3.9
It is hoped that there is no external constraint to occur in the future	16	6.2
The implementation of ODL should be improved	46	17.9
The learning institution should play a greater role in making sure ODL runs smoothly	3	1.2
ODL should help me to get good grades	45	17.5
Students have to be well prepared for ODL in the future	10	3.9
It is good to be back to physical classes	28	10.9
It is hoped for ODL to improve my understanding towards the lessons better	8	3.1
I have positive expectation of ODL as future way of learning effectively	15	5.8

Table 3 shows the participants expectations on educational decisions of ODL. It was found that there are three main expectations of the students related to ODL. The main concern of the respondents was to discontinue ODL (23.3 percent; n=60). This is self-explanatory when in item 9 on Table 3, students expect their studies to be back to physical classes (10.9 %). Most of the students were dissatisfied with the implementation of virtual learning mode during this pandemic and were hoping for improvement. It was noted that 17.9 percent of the respondents (n=46) expects ODL implementation should be improved. This is followed with the expectation that ODL should be helping them in getting good grades (17.5%; n=45).

These perceptions of the respondents were further substantiated when in the open-ended questions students reveal their perceptions towards ODL in the future by providing reasons. Table 4 presents direct quotes of the students regarding the expectation of ODL in the future.



Table 4 Participants Expectations on Educational Decisions of ODL

1	"I think I don't want any odl classes anymore"
2	"Lets just make sure no odl anymore"
3	"i hope it will be end for sem 4"
4	"i hope there's no more ODL in the future."
5	"I hope this ODL is last for this sem"
6	"I hope that ODL will not be continue in the next semester"
7	"not happened again in next semesters."

When asked on their agreement that ODL will be the future for their learning, it was noted that respondents hope that ODL will no longer be implemented in the future or in the upcoming semesters when they used phrases in No 1 to 7 above.

Table 5 Reasons for ODL to Discontinue in the Future

8	"I hope ODL is just a temporary alternative not a permanent because ODL is not 100% effective to students"
9	"I hope that odl will not be the reason i give up with my studies"
10	"I hope ODL will end soon because students are hard to understand the subjects with ODL"
11	"i just hope ODL is end and covid end bacause i can't adapt it"

Table 5 presents the direct quotes given by students for the reasons ODL to discontinue in the future. Extract No. 8 highlights students perceive ODL as fully ineffective for students and No 9 shows the frustration of the respondent towards ODL until a kind of warning is given, that is if ODL continues, the student might withdraw from studies. Among the reasons that students perceive for discontinuation of ODL in the future is the difficulty for students to adapt with ODL learning method (No 11) and also hard to understand subjects during ODL(No 10).

The second highest expectations for future ODL as perceived by the students is to improve the implementation of ODL as presented in Table 6 below.

Table 6 Responses on the Implementation of ODL Should be Improved

12	"I really hope that ODL is not a things that burdensome the student, but a way that makes learning more <i>fun</i> ."
13	"ODL is great for certain subject but when the subject is hands on i think it is not great idea to do ODL, I hope in the future there is <i>better strategy</i> for student that need hands on assignment instead of making a video so that they can get the experience."
14	"Less assignment"
15	"I hope ODL can be <i>more relax</i> and not to do like assignments all the time as it can make students feel bothered and stress"
16	"I just hope the ODL <i>did force students</i> to do too much assignments in certain time as that makes us loss our efficiency in doing our own work."
17	"Can make <i>less pressure and more fun</i> "
18	"the class will become <i>more lively</i> "
19	"I hope odl can be <i>more creative in aproaching students</i> so student can be more excited enough for having classes"
20	"I hope ODL will be even <i>more fun and happening</i> . Besides, <i>not a burden or pressure</i> to the students because it can cause mental health"
21	"I hope that for future ODL, it will be <i>more fun and enjoyable</i> by all of students 😊"
22	"I hope that there will be <i>more individual assignment</i> "

Table 6 presents the direct quotes of the respondents' reasons on ways to improve ODL in the future. It was noted the majority of the students are bored and need variety in the lessons. Most of them highlighted the word 'fun', 'interesting', 'relax' 'lively' and 'enjoyable' to show they needed some variety in the teaching mode. Besides, Extract No 19 shows clearly the expectations towards lecturers to 'be more creative' when approaching students. Another expectation of students was to be flexible with assignments and reduce assignments by providing more hands-on assignments instead of just recording video presentation which could lead to stress.

Furthermore, another concern of students during ODL is their study performance. Students also expect good results although they are in ODL mode. Their expectations to get

good grades show that they have great concern over the study mode. Table 7 show students' perceptions towards expecting good results in the examination.

Table 7 Responses on ODL Should Help the Students in Getting Good Grades

23	<i>"I hope I won't fail each semesters that are using ODL method as it is my greatest fear. I just don't want to upset my parents."</i>
24	<i>"I hope i can get pass the final with flying colour"</i>
25	<i>"I hope that i can pass all semester without repeat"</i>
26	<i>"I hope ODL will help many student in achieve their studies"</i>
27	<i>"I hope ODL can give me a good results based on my efforts"</i>
28	<i>"I hope I will get As for my ELC231 because in my semester 1 and semester 2, I always get B+ only"</i>
29	<i>"I hope the output that i can get from ODL will be the same as normal class"</i>
30	<i>"Getting pass as face to face learning"</i>
31	<i>"i hope i still can get a great pointer eventhough learning in ODL"</i>
32	<i>"To get a better results"</i>
33	<i>"Get the best results"</i>
34	<i>"I hope the I will get a better result in ODL as the questions for tests and quizzes are quite hard."</i>
35	<i>"i hope i can survive odl and get dean list for this current semester."</i>

As shown in Table 7, students are really hopeful to get good grades during this ODL as to ‘not upset their parents’, ‘not to repeat subjects’ and ‘still in the dean’s list’. Most of the respondents put high hopes towards ODL in the future to help them with their grade and to avoid any failure as the questions and quizzes that was tested in the examination were perceived as ‘quite hard’. Besides, some of the respondents hoped that their result will not be affected by ODL as they have done well in physical classes before.

V. DISCUSSIONS

Results gathered from this study revealed that students face different experiences while adapting to the new learning approach in ODL mode. In this current study, the respondents reported that the most frequent medium used to attend classes in ODL was through Google Meet. The majority of the respondents attended all the classes despite the platform they use to interact. In addition, it was reported that the most frequent gadgets respondents use for ODL were laptops and mobile phones and majority had their own gadgets for ODL purposes. Only a very small number of respondents used other family members’ gadgets. Yeoh (2020) claims that Malaysia as a whole is not ready for virtual system since most students in rural schools do not have their own phones and faced difficulty in e-learning during MCO. Contrary to the findings of Yeoh (2020), this study found that all the students have their own technological gadgets for studying and only a small number uses parents or family members’ gadgets.

It is also noted that the mode for assignment submission in ODL was mainly on Microsoft Teams. followed on Google Drive though the main platform used for learning was Google Meet. Another finding from the study was the participants’ expectations on educational decisions of ODL. It was found that there were three main expectations of the students related to ODL; mainly to discontinue ODL and revert to face-to-face.

This is consistent with what has been found in previous study where it was found that students were dissatisfied with the implementation of virtual learning mode and hoping for improvement (Abbasi, Ayoob, Malik & Memon, 2020;

Aiman,2020). However, opposing views were reported by other studies (Khan, Vivek, Khojah & Tahir, 2021; Singh & Thurman, 2019) claiming that respondents are comfortable with learning in an online platform, though they are away from any physical interaction.

Among the extracted reasons reflected that respondents perceived ODL as ineffective. They were frustrated over the ODL mode and some perceived it was difficult for them to adapt to ODL mode. Some even perceived that they might discontinue their studies if ODL continues, besides having difficulty understanding subjects in ODL and hope less stress from the types of assignment they receive from lecturers. This is opposed to findings by Sit, Chung, Chow and Wong (2005) who found that students have the ability to understand concepts taught in subjects. Furthermore, the current study found that students are still grappling to adapt ODL and understand their courses and this result ties well with the previous studies that highlighted confrontation with computer technology was stressful (Chung, Weng & Chen, 2018) and difficult to understand subject matter (Vanslambroucka, Zhu, Lombaerts, Philippen, & Tondeur, 2018; Bali & Liu, 2018; Chung, Chow & Wong, 2005) and ODL increase workload (Vanslambroucka, Zhu, Lombaerts, Philippen, & Tondeur, 2018; Ravi, 2014).

VI. CONCLUSION

The main conclusion that can be drawn from the current study is that students use various platform during ODL such as Google Meet, Microsoft Team, YouTube and Zoom. However, the most preferred platform is Google Meet. Another promising aspect that is worth highlighting that Malaysia is ready in terms of moving towards ODL because the majority of the students have their own technological gadgets for study purposes and very small number uses their parents or family members’ gadgets.



However, there are improvements to be made as students are not happy with the implementation of ODL and they perceive ODL should not continue in the future because ODL is ineffective, difficult to adapt and difficult to understand subject matter. Students are hopeful that ODL lessons will be more interactive, creative and less stressful.

Results in the present study have several implications for educators, curriculum designers and universities to improve ODL experiences for Diploma course students. Educators need to design lessons creatively so as to not overburden students with boredom, assignments and group activities while in ODL. In line with this, students as the new generations despite surrounded with technology, need creatively designed lessons to retain their attention span on subject matter and reduces mobile data usage (Sim, Sim, & Quah, 2021) to less income families. Lecturers can include some games to make lessons more interesting. The delivery of lessons can also be livelier and attracts full attendance to ODL classes.

Educators can also allow flexibility in submission of assignments by providing choices of tasks, mode to conduct the tasks and allow mutual agreement for submission of assignment datelines. Allowing the students flexibility of assignment guidelines will tap the creativity within the millennials. This is in line with the ODL theory of Constructivism views where ODL promotes autonomous learners who construct their own knowledge by exploring through experience in ODL mode.

As on the part of the higher learning institutions, proper management of internet facilities, technical support and training of staff and students need to be conducted for efficacy of ODL implementation. Even though the students have their own gadgets, they have different expectations for ODL in the future. Each of the expectations should be considered seriously as they can have implications during the lessons. Lecturers can include some games to make the lesson more interesting.

Broadly translated, the findings from the present study contribute to the existing literature on ODL as the future more of learning for tertiary education especially for Diploma course students. The findings provide a basis to meet the aspirations of the government in the Education Blueprint, 2013-2025 (Ministry of Education Malaysia, 2013) on the need to transform education for more tech-based lessons for the millennials. Thus, there is a need to properly planned ODL implementation with full support from all involved in ODL mode.

LIMITATIONS AND FUTURE STUDIES

The findings of the present study cannot be generalised to the whole population of Diploma course students in Malaysia or globally since it is confined only to the participants involved in this study. Hence, it is recommended that future research on ODL should be conducted on different samples with a larger group of respondents as it may produce different and interesting responses. Future research should also consider the investigating the potential effects of ODL on students' performance looking more carefully into the achievement of the students in respective courses and suggest appropriate measures to be taken to ensure the effectiveness of ODL mode.

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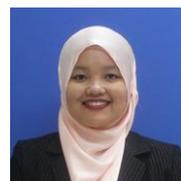
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Diploma Engineering Students' Perceptions of Online Distance Learning



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