

## The Facilitating Conditions with CIDOS 3.5 Utilisation

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### Abstract

Curriculum Information Document Online System or CIDOS is a web-based application to facilitate the online teaching and learning among lecturers and students. Implementing on full online learning due to Movement Control Order (MCO) due to Covid-19 pandemic restrains the lecturers and students learning via face to face. Facilitating conditions (FC) play important role to facilitate lecturers and students online leaning using CIDOS 3.5 This study aims to examine the relationships between facilitating conditions with CIDOS 3.5 utilisations among the lectures in Politeknik Mukah Sarawak (PMU). A total of 103 lecturers from seven departments participated in this study. The results show FC is significantly positive with CIDOS 3.5 utilisations. The outcomes of this research can benefit the decision maker of Malaysian polytechnics to enhance CIDOS 3.5 utilisation and promote its effectiveness in teaching and learning activities as well as strengthening the quality of teaching delivery.

*Keywords:* - *e-learning, CIDOS 3.5, facilitating conditions, Covid-19, polytechnics*

### 1. Introduction

Polytechnic, one of the higher institutions in Malaysia, is not left behind in adopting the e-learning approaches in the teaching and learning activities. An open-source learning management system (LMS) known as the Curriculum Information Document Online System (CIDOS) was introduced and used as the e-learning medium in polytechnics. This fully automated document management platform, which integrates several functions such as uploading, updating, and sharing digital content, allows interaction to take place online between lecturers and students in polytechnic (Ismail et al., 2014). An earlier study found that the use of CIDOS can provide facilitation in teaching and learning activities, which relates to the Outcome-Based Education (OBE) such as Problem-based Learning (PBL) (Murugan and Muhammad, 2012). However, a later research conducted by Razali and Shahbodin (2014) concluded that the weaknesses found in the CIDOS platform had discouraged lecturers from utilising the LMS as the communication tools in teaching and switched to social network sites instead. This situations and also with Covid-19 pandemic, the government enforces MCO for the whole country and teaching and learning would be conducted fully online. This scenario forces lecturers and students should have good internet access, computers and other teaching facilities to facilitate the teaching and learning process. Hence, the research objective is to examine the relationships between facilitating conditions with CIDOS Utilisations among the lectures in PMU. The remainder of the chapter is systematised as follows: following present literature review of past study of facilitating conditions and CIDOS utilisations, subsequent section of methodology

employed and followed by findings, and lastly by conclusion and recommendations of this study.

### 2. Literature Review

Information systems provide facilities to the users to perform a procedure (Groves and Zemel, 2000). Helpdesk and online support are needed to assist users while using CIDOS. The previous article which came from the same authors proposed research framework that include age, technology and system, facilitating conditions, and the centralised system as factors affecting the adoption of CIDOS 3.5 in Politeknik Mukah Sarawak (Adi et al., 2020). Facilitating conditions refer to users' facilities in performing a procedure. In the e-learning system, facilitating conditions are derived from the organisational support (staff), and the system architecture (tools). The organisational staffs help learners to overcome the difficulties, and system's tools provide information concerning the use of the system (Terzis, 2012). Implementing e-learning is not as easy as it is assumed. Without guidance and manual provided from trainer and courses, this will lead to misconception or misunderstanding in delivering or using the system related to e-learning. Several studies have found that a lack of access to computers, inadequate technical support, and lack of support from peers to be barriers to ICT integration (Lim and Khine, 2006; Melinger and Powers, 2002 and Teo, 2010). A study by Kassim et al. (2010) suggested that the top management emphasis, facilitating conditions and system quality are the factors that motivate lecturers and students to use the system because when online learners receive support in the form of assistance in online registration, course selection, online technical help, and timely feedback from instructors, they would perceive e-learning to be easy to use (Lee, 2006).

Findings showed the acceptance of accounting students in Politeknik Sultan Abdul Halim Mu'adzam Shah (POLIMAS) Jitra Kedah on the usage of e-learning in everyday, which the system needs encouragement from the instructors to achieve an effective utilisation (Razlina, 2016). Online assessments may not be favoured by lecturers due to their scepticism towards the reliability of such assessments and also needs consideration the required technology, delivery, pedagogy, learning styles and learning outcomes (Ghani et al., 2015). Gender also plays important roles on adapting to new technology, women are more dependent on the facilitating conditions when they are using new technology (Kamaghe et al., 2020 and Masadeh et al., 2016). Venkatesh et al. (2003) found that facilitating conditions without adding any moderator is not significant to predict intention to use system when the construct of effort expectancy is used in the same model, but when it is moderated by age and experience; it had a strong effect for older workers with increasing experience.

### 3. Research Methodology

This study implemented cross sectional design and the data collected through purposive sampling. The sample respondents conducted with lecturers from various academic backgrounds at seven academic departments in PMU including Commerce Department, Information Technology and Communications Department, Mathematics, Science and Computer Department, General Study Department, Civil Engineering Department, Electrical Engineering Department and Mechanical Engineering Department. The set of questionnaire was modelled from Unified Theory of Acceptance and Use of Technology (UTAUT) is an acceptance and adoption model created by Venkatesh, Morris, and Davis in 2000 using a 5 Likert Scale. Virtuous results can be achieved if the questionnaires are distributed to all lecturers in PMU, however, it was not materialised due to some limitations. In addition, a table by Krajie and Morgan (1970) was used as the sampling method. Since the information from the sample is used to generalise or make a conclusion about the population, the sample must be selected in such a way that it will accurately represent the population. In order to ensure the accuracy of sampling process, appropriate sampling techniques must be used. The questionnaires were personally distributed to all lecturers, and they were given a week to complete the questionnaire. The completed questionnaires were collected after one week. In total, up to 200 questionnaires have been distributed to all lecturers in PMU, where only 103 or 69% of them returned the questionnaire. This study utilised few common statistical tools to analyse the data. SPSS Version 26 was used for this purpose. The reliability tests on the identified variables for this study were

found to be acceptable and reliable as the Cronbach's Alpha values for all the variables are above 0.60. The following are the outcomes from the reliability tests: CIDOS Utilization (7 items; Cronbach's Alpha= 0.941); and Facilitating Conditions (5 items; Cronbach's Alpha= 0.883)

## 4. Analysis and Findings

### 4.1 Respondents' Demographic Profiles

Table 1: Respondents' demographic profiles.

Characteristics		N	(%)
Age	21 to 25	1	1.0
	26 to 30	33	32.0
	31 to 35	17	16.5
	35 to 40	35	34
	Above 40 years old	17	16.5
Gender	Male	45	43.7
	Female	58	56.3
Education Level	Degree	63	61.2
	Master Degree	36	35
	PhD	4	3.9
Department	Department of Civil Engineering (JKA)	13	12.6
	Department of Commerce (JP)	28	27.2
	Department of Electrical Engineering (JKE)	13	12.6
	Department of General Studies (JPA)	8	7.8
	Department of Information Technology & Communication (JTMK)	4	3.9
	Department of Mathematics, Sciences & Computer (JMSK)	27	26.2
	Department of Mechanical Engineering (JKM)	10	9.7
Teaching Experience	1 - 3 years	6	5.8
	10 - 12 years	12	11.7
	4 - 6 years	3	2.9
	7 - 9 years	6	5.8
	Below 1 year	35	34.0
	More than 12 years	41	39.8

A total of 103 respondents participated in the survey. The survey response rate is 78%. Table 1 presents the respondents' demographic profiles. The majority of our respondents were female (56.3%) and male respondents were 43.7%. Overall, about 34% of the respondents were between 35 and 40 years old, and about 39.8% of them reported to have teaching experience more than 12 years. With regard to the distribution of survey respondent according to the teaching department, the study obtained feedback from the Mechanical Engineering Department (9.7%); the Commerce Department (27.2%); the Electrical

Engineering Department (12.6%); the Technology Information Department (3.9%); the Mathematics, Sciences and Computer Department (26.2%); the General Study Department (7.8%); and the Civil Engineering Department (12.6%). Also, 61.2% of the respondents obtained first degree and the remaining (35%) of the respondents have master degree.

#### 4.2 Factors That Can Encourage/Inhibit CIDOS Utilisation

In this study, we performed further correlational test to examine the relationship between CIDOS utilisation with facilitating conditions. Table 2 below presents data about means and standard deviation values for four identified variables in this study, namely, CIDOS Utilisation and Facilitating Conditions. While Table 3 shows the findings from correlation analysis using Pearson Correlation Coefficient test.

Table 2: Mean and Standard Deviation (SD) for identified factors and CIDOS utilization.

Item	Mean	SD
<b>Facilitating Conditions</b>		
Master trainer is always there to help users.	4.049	.8329
Effective system support is available.	3.893	.8154
CIDOS e-manual is easy to understand.	3.689	.8635
The lecturer always gives teaching schedule very early before teaching start.	4.204	.7587
There are frequent trainings for users.	3.854	.8094
<b>CIDOS Utilisation</b>		
A user is provided with very good infrastructure access.	3.845	.8717
CIDOS is better than conventional method delivery without CIDOS.	4.019	.8743
CIDOS design is good.	3.748	.9468
CIDOS is useful for teaching.	3.883	.8552
ICT skills and knowledge are important in using CIDOS.	4.233	.8069
Trainings are needed in using CIDOS.	4.495	.6549
A user can obtain good organisational support when using CIDOS.	3.913	.7810

As shown in Table 2, respondent agreed that, the Facilitating Conditions that can encourage the effective use of CIDOS, is the lecturer gave the teaching schedule early with the mean score of 4.204. It shows that, by releasing the lecture material early it able to facilitate the user as for early preparation

before come in into class. This finding is consistent with Sabli et al. (2013) where user will effectively adopt to CIDOS with training, face-to-face and online help as well as early release of teaching schedule. Next, with mean score of 4.049 is master trainer is always there to help. It shows that, with the availability of the master trainers to facilitate, user able to encounter the problem arise more efficiently. This finding is also supported with studies from Kassim et al. (2010) where with on time assistance from master trainer, it is able to encounter the difficulties on e-learning process as well as reduce the potential barriers. The other three indicators for facilitating conditions do not really affect the user as it consider neutral for them with mean score of 3.68 to 3.89.

The level of CIDOS utilisation among the lecturers at PMU was moderately high, with mean values are ranged between 3.50 and 4.49. For this category, the highest mean value is (mean =4.495), which is related to training availability. It is because with proper support system such as training and administrative support it able to improve the user instructional knowledge on technology application. This finding also consistent with study from Groves and Zemel (2000) where with various support such as skill training, information or materials available and administrative support played a very important factors by teachers to influence their students during instructional technologies courses. Next, respondents also agreed that skills and knowledge on ICT and a better method of delivery of CIDOS compared to conventional method played a vital role on the utilisation of CIDOS itself. With mean scores of 4.23 and 4.01 respectively, this two indicators complement each other and occupied with good quality and system design, it drive the user to self-explore as to achieve the efficacy of their usage. Referring to Teo (2010), this aspect able to boost user desire on the usage of technologies as to develop and achieve their self-efficacy on computer technologies. The other four indicators for utilisation of CIDOS do not really affect the user as it consider neutral for them. But the mean score approaching the stage of agreed.

Table 3: Relationship between facilitating condition with CIDOS utilization among lecturers in PMU

Variables	Significant value (p)	Pearson Correlation (r <sub>s</sub> )
Facilitating Conditions	0.000	0.689

Note: Significant value with  $p \leq 0.05$

Using Pearson Correlation Coefficient test, this study found that all the identified factors have significant relationships with CIDOS utilisation. In this case, Table 3 shows that the correlation coefficient obtained was 0.689 and p-value for this

correlation was smaller than 0.05. This shows that there is a significant relationship between the levels of facilitating condition of CIDOS use among lecturers in PMU, based on the correlation value that is moderate and positive. This means that CIDOS utilisation among lecturers can be increased when they are provided with high or good facilitating. These finding was supported by Khasawneh (2015), there were significant positive relationships between self-efficacy and all facilitating conditions including technology and resource with the behavioural intention to use ICT among academic staff.

## 5. Conclusion and Recommendations

The results show a significant relationship between facilitating conditions with effective utilisation of CIDOS among the lecturers in PMU. This objective is supported by finding from Sabli and Wahi, (2013). It also indicated of upgrading the CIDOS system to be more constructive with good web design. The researchers also suggest a comparison on the e-learning system in other institutions of higher learning. This will lead to see the best system for Malaysian education. Furthermore, the findings of this research can also be implemented to students in all over Malaysian polytechnics to see their level of CIDOS utilisation. Apart from that, other variables also have to be surveyed in order to see the relationship between lecturers and students. Online teaching and learning can be conducted anywhere and everywhere efficiently as long as the users have an access to the Internet and device. Hence, they must familiarize with CIDOS together with the guidance from master trainer. Inter-dependence between facilities, master trainer and knowledge of users contribute to the successful of CIDOS implementation at PMU. During the pandemic, e-learning makes users become more flexible in time, save money and energy to travel to the place of learning. Upgrading the CIDOS utilization from time to time in order to meet the user's need during pandemic will make online teaching more interesting and challenging.

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