

Implementation Of LMS-CIDOS In Polytechnic English Language Classroom: Issues And Challenges

Mahanim Binti Hasnan^{1*}, Mohaida Binti Mohin²

¹General Studies Department, Polytechnic of Muadzam Shah,
Lebuhraya Tun Abdul Razak, 26700 Muadzam Shah, Pahang, Malaysia
mahanim@pms.edu.my

²Kuliyah of Education, International Islamic University Malaysia,
Jalan Gombak, 53100 Kuala Lumpur
Wilayah Persekutuan Kuala Lumpur, Malaysia
aida@iiium.edu.my

*Corresponding Author

<https://doi.org/10.24191/ajue.v17i4.16253>

Received: 10 September 2021

Accepted: 30 September 2021

Date Published Online: 31 October 2021

Published: 31 October 2021

Abstract: The wide implementation of the Learning Management System (LMS) in many Higher Education Institutions (HEIs) in Malaysia is seen as strong support for eLearning. Many LMS have been developed and adopted based on their features, usability and functionality that can offer benefits for the whole faculty of the institution. In Malaysia's Polytechnic, LMS-CIDOS is a platform used for eLearning. A blended learning platform has become a need for many lecturers. This study investigated the perception of English Language lecturers in utilising the platform to implement eLearning in language classroom teaching. This study explored the issues and challenges in implementing the blended learning concept in Muadzam Shah Polytechnic. The lecturers' perceptions in this study were measured using the Instructors LMS Acceptance Model proposed by Kamla and Hafedh (2010), which was modified from the original Technology Acceptance Model (TAM) by Davis (1989). Seven experienced English Language Lecturers were also interviewed using the semi-structured interview approach. Among the themes that emerged through the thematic analysis was the reliability of hardware, software & internet connection, design and content organisation, temporary record-keeping, complex system structure, inadequate time and work management, insufficient training and support from the institution, the need for teaching guide from the expert, lack of skills to encourage active communication using LMS-CIDOS and students' lack of digital literacy skills. The findings of this study offer an expanded understanding of LMS acceptance among higher education instructors and a reference for related areas of study.

Keywords: Blended learning, e-learning, LMS-CIDOS.

1. Introduction

Since eLearning is taking place, education is evolving to become more dynamic and changing the way knowledge is transferred (Ramon, 2007). Instructors and students are two entities that are mostly affected by the changes technology has brought into the education environment. Adjusting themselves to learn in a new medium as well as having to integrate technology challenges the existing skills in the process. As cited in Khaferi, Bahiti and Imeri (2015), Transforming teaching styles from those conventional to the new ones in use presents several challenges including changes in cultural expectations and ongoing development of technological capabilities of instructors and students. Despite

the fact that many English language teachers are still struggling to develop effective instruction to engage pupils to study English in face-to-face classrooms, technology plays a role. (Suppasetserree & Dennis, 2010). The presence of technology in education has called for a new approach in teaching and it should be expected. Language instructors particularly should take the opportunity that technology has and perceive it as a ‘bonus’ that allows students to apply the knowledge into practice. Students can improve language skills as they practice reading, listening, speaking and writing via the different eLearning resources and tasks (Soliman, 2014). However, it is not easy to make an instant shift from face-to-face to teaching online as instructors need to master the technology first to bring a more meaningful learning environment to the students. Once the instructors have decided to use the technology they need to know how to operate the technology apart from pedagogical strengths and weaknesses (William, 2019).

One of the shifts experienced by many institutions in the practice of online learning currently is the adoption of Learning Management Systems (LMS). The LMS is one such technology that supports eLearning programs (Coskuncay, 2013; Lasanthika, 2019). It is one of the components of eLearning that is adopted by many Higher Education Institutions nowadays in teaching and learning practice (Alenezi, 2018). The adoption of a learning management system (LMS) is not meant to replace traditional classroom settings; rather, it serves to enhance traditional lectures with course information that can be accessible via campus or the Internet. (Landry et al., 2006; Jamal & Shanaah, 2011). LMS is known as a software program that contains a number of integrated instructional features and functions. It seems to be a promising tool which can enhance the interaction between students and instructors.

Adapting LMS as part of the eLearning practise has succeeded to bring a positive impact in supporting teaching and learning practise, notably in Higher Education Institutions, according to a number of studies (HEI). According to a study conducted by Bere, Deng, and Tay (2018) on the influence of eLearning using LMS on teaching and learning performance, eLearning using LMS is more successful than traditional instruction techniques in improving teaching and learning performance in higher education. The same result held by the students studied by (Burgstrom, 2017) who recognized the ability of Schoology, the Learning Management System in aiding the students’ individual learning and allow them to pace their own learning in the classroom after the platform is given encouragement by the instructors. In particular, both results agreed that lecturers who make best use of interactive elements and tools in the LMS have been found to have a positive impact on student engagement. The same view shared by Lasanthika (2019) Effective use of LMS enriches the learning experience for all stakeholders involved. However, numerous studies have also highlighted the challenges faced by educators in transitioning from traditional, face-to-face teaching to online teaching using LMS (Jamal & Shanaah, 2011; Yuyun 2013; Oliveira, 2016; Lasanthika & Thennakoon, 2019; Thouraya, 2019; Kite et al., 2019). Although platforms of eLearning like the LMS have been introduced to the executors by the institution, the acceptance of the system will determine the utilization (Venkatesh & Davis, 2003).

Like the LMS-CIDOS, the existence does not guarantee its acceptance and adoption by the lecturers to be used in their teaching practice. With regards to the free open sources LMS that is available on the internet like Google Classroom, MOOC, Schoology, Blackboard and so on, the provided LMS-CIDOS system is at a great competition to be perceived as useful by the instructors. Some might get drawn into scepticism to find the best tools with more useful features and characteristics to assist their online teaching. Hence the problem of underutilization of the LMS-CIDOS platform is seen as significant and in need of in depth study. This has drawn the attention of the researcher to find out the issues and challenges to implement blended learning and how well the utilization of LMS-CIDOS is being paid by lecturers to execute eLearning practice in the institution.

2. What is LMS-CIDOS?

“A Learning Management System (LMS) is a software application for the administration, documentation, tracking, reporting and delivering by e-learning education courses or training programs.” (cited in Chaubey & Kala 2015; Ellis, 2009). Moreover, Ouadoud et. al (2018) describe The Learning Management System (LMS) or eLearning platform is a software program that provides a variety of services to help instructors to manage their courses.

LMS in higher education institutions has been carried out since 2003 for an effective and efficient communication system with the aim to provide students with self-paced modules (Muhammad et.al. 2014). To ensure the strategic plan run as planned, the Instructional and Digital Learning Division of Polytechnic and Community College has formed a Digital Learning Unit which known as Centre for eLearning and Teaching (CeLT) which function as a unit that govern the e-Learning agenda and provide support to all the 36 Polytechnics in Malaysia

CIDOS is a web-based system that allows user to keep track of their curriculum document inventory, teaching and learning resources, and knowledge sharing in one place. Instructors can use CIDOS to create a forum, talk, submit teaching and learning resources, and track student progress. (Mahfuzah et.al, 2014). The adoption of LMS is seen to improve the quality of teaching and interaction between students and lecturers. It can be considered as a versatile support for teaching and learning where lecturers or teachers alike can create, administer and keep track of students' learning progress. In the mid of 2010, some polytechnic institutions started to venture into the use of LMS in conducting teaching and learning processes before it was fully utilized by most polytechnics in Malaysia in 2011. Since then, LMS is mostly used to distribute learning material, disseminate instructions, collecting assignments and executing online tasks or quizzes.

3. Literature Review

Numbers of research have proven that technology has a lot of potential for improving second language learning. (Beatty,2013; Chapelle, 2016; Hashim, et. al, 2018). Ashrafzadeh & Sayadian (2015) viewed that Teaching and learning can be made more interactive with the help of technology, making instructions more effective. Many English language teachers have been looking for effective ways to motivate students to learn English in order for the students to have a better learning experience. One of the options is by employing an eLearning concept in the classroom (Suppasetserree, 2010). There are various high-tech, mid-tech and low-tech communication systems that are used for language acquisition, and as emerging technologies affect the way students learn a language (Ersoy, 2013). New educational technologies aid in the delivery of educational content, for example, by making it interactive and immersive. (Ahmad, 2019). The use of technology has made it possible to have more interesting and productive teaching and learning sessions, particularly in language learning. (Pazilah et. al, 2019).

The strength of an LMS also lies in one's ability to integrate other applications to facilitate assessment, management and teaching and learning (Rodzi et.al, 2019). Teaching, designing and developing online courses requires extensive faculty development in which it involves a new set of skills, knowledge, and professional growth (Gautreau, 2011). LMS is a technological tool used by most educators and instructors in Higher Education Institution to support teaching delivery (Embi, 2011). Educators who are using technology in teaching mostly spent their personal hours exploring suitable tools, applications and materials to develop and organize their personalized teaching content in the LMS platform. Therefore, understanding instructor individual experience in the struggle to develop and form their virtual classroom using LMS is crucial and could give valuable input to the development of the language teaching field. Reid (2019) believes that study on the perspectives of instructors and students on their experiences adopting and using online learning management systems are worth investigating. While numbers of studies have agreed that instructor personal experience is matter in improving the execution of eLearning in an institution, this current study is intended to approach English Language lecturers in Polytechnic Muadzam Shah who have been using the LMS-CIDOS platform and learn what are the issues and challenges that LMS has brought into the traditional classroom.

The revolution of online learning somehow set some instructors to feel in trepidation about handling some pedagogical issues they need to encounter when switching from face-to-face to online learning environments and vice versa. Kebritchi (2016) studied the related literature on issues in teaching online wrote a review by using the Cooper's (1988) framework asserts three major issues which are issues related to students, instructors and content development. Instructor issues were classified into four categories: changing faculty roles, transitioning from face-to-face to online, time management, and teaching styles. While the issues in content development include the role of instructors in content development, the integration of multimedia in content (including tools and features), the role of instructional strategies in content development, and content development

considerations. Kebritchi asserts that it is necessary for the instructors to know what tools are best to present the concept of the learning outcome. He added that instructors need to be knowledgeable about the mode of communication using various interaction software in the LMS to establish relationships by helping them to connect and interact so the student would feel they are part of class. In a study conducted by Abu Seman, Hashim, Roslin & Ishar (2019) on students' acceptance and satisfaction of blended learning environment, the result unveil that one of the element that engaged students with the online lesson is the instructors' quality. It is described as having good technical skills and pedagogical skills to facilitate course offered via elearning which leads to the students' satisfaction towards the use of LMS.

To note, several findings related to LMS-CIDOS have been retrieved to understand the common problems faced by the user of the system. There have been numbers of studies and reveal the problems, issues and challenges polytechnic lecturer have to encounter while using the LMS CIDOS system in teaching, little has been written about its challenges specifically in English Language classroom which offered in almost all polytechnic institution and enrolled for three semesters out of six semesters along the student's diploma study time.

3.1 Theoretical framework

In this study the researcher believes that the issues and challenges that affected the utilization of LMS-CIDOS among English Language lecturer can be understood from the external factors categorized as instructor factors, organization factors and technology factors. As depicted in figure 1, the mentioned factors contribute to the Perceived Ease of Use (PEOU) and Perceived Usefulness (PEU) that determine the attitude towards the system use. The researcher believes that this would clarify the reasons behind the system lack of use among the instructors. The connection between PEOU and PEU would tell how well the system is being used as it determines the attitude of the user. The whole framework would be the guideline for the researcher to gain in depth understanding and generate finding for the research. The interview questions constructed are derived from the element in the factors which will reveal the experience of the instructors throughout the implementation of online learning using the LMS-CIDOS system.

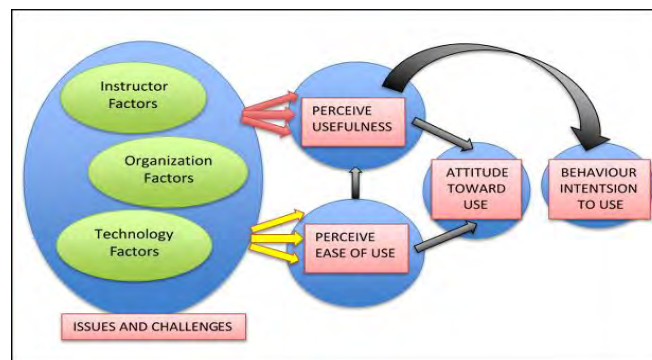


Fig. 1 The Conceptual Framework Adopted from Instructor's LMS Acceptance Model by Kamla & Hafedh (2010)

4. Methodology

The semi-structured interview approach is found to be suitable due to its characteristic that will let the session focus on its central questions which are the predetermined questions set by the researchers. The standard set of open-ended questions helps the researcher to delve into the participants thought and feeling at the same time gain access to their motivation in using the system while, comparison between the responses can be made through thematic analysis approach to inform the main issues and challenges faced by the group of lecturers who have dealt with the system for few semesters.

Semi-structured interviews generate not only information, but also themes and categories of analysis from the responses of various movement participants. (Blee & Taylor, 2001).

The interview session involved all the seven lecturers and all of them agreed to be interviewed. The interview session was scheduled according to the lecturer's free teaching slots in the timetable. Permission through the personal message was sent to them through text message beforehand and agreement to meet was achieved based on their readiness to meet for the interview. For easy identification and reference, interviewer-researcher was referred to by the code presented in table 1;

Table 1. Code for Interviewer, Question and Interviewee

Code for Interviewer	Code for question	Code for interviewee
Interviewer = M	Q1	Interviewee 1= LC
	Q2	Interviewee 2= LAZ
	Q3	Interviewee 3= LR
	Q4	Interviewee 4= LN
	Q5	Interviewee 5= LNWR
	Q6	Interviewee 6= LMH
	Q7	Interviewee 7=LYSR
	Q8	
	Q9	

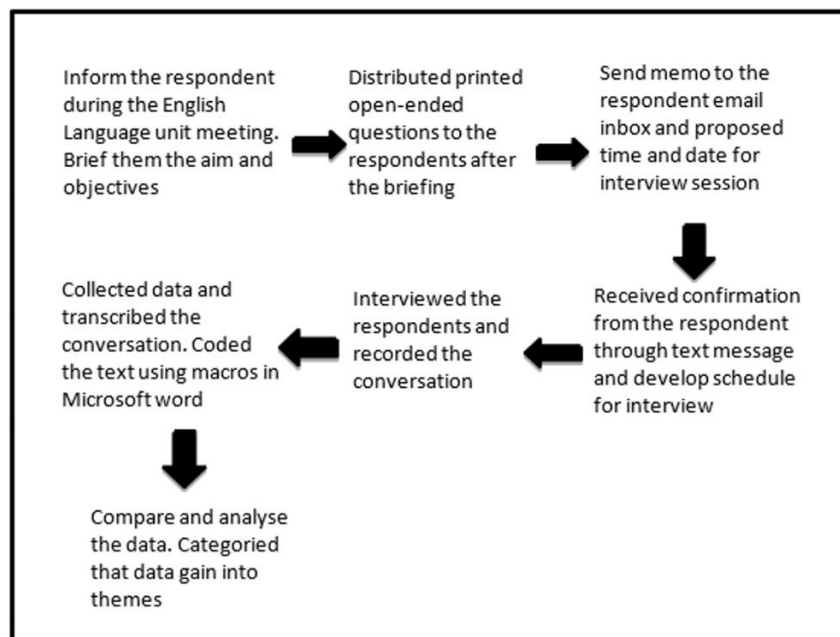


Fig.2 The Flow of the Data Collection Method

5. Discussion

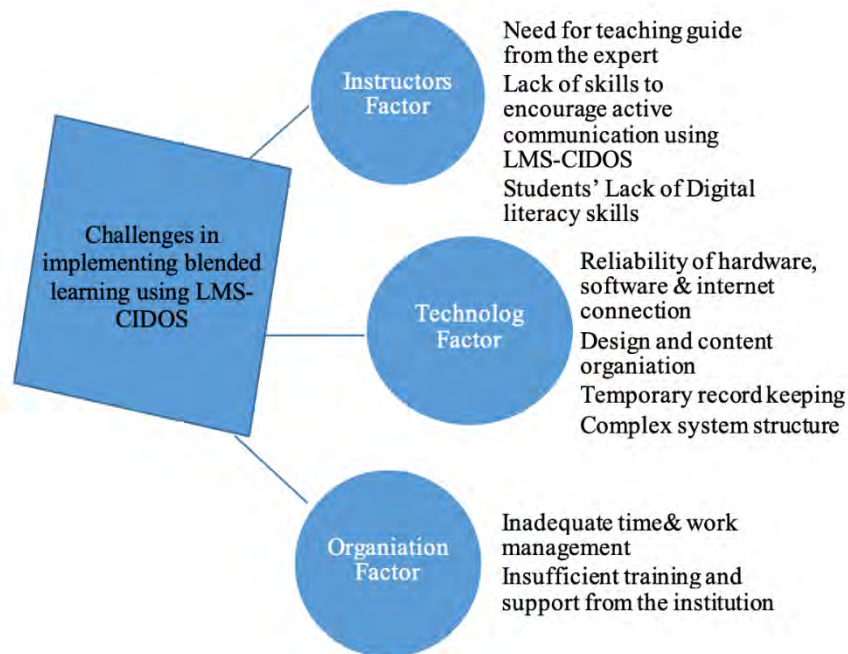


Fig. 3 The Outline of Research Findings (Challenges in Implementing Blended Learning Using LMS-CIDOS)

5.1 Technology Factor

The results gained for research question one show that the three factors which are organization factor, instructor factor and technology factor proposed by Kamla and Hafedh (2010) emerged on the first six themes. Reliability of hardware, software and internet connection, inadequate time and work management, the need for teaching guide from the expert, insufficient training and support from the institution, design and content organization, and lastly temporary record keeping were identified as the challenges to execute eLearning implementation using the LMS-CIDOS medium. Of all the themes, three themes focused on technology factors named as the reliability of the hardware, software and the internet connection, design and content organization, and temporary record keeping. According to Kamla and Hafedh (2010) technology factors can be related to the system quality, service support and information quality. As cited in Roca et. al. (2006) the system quality and support affect directly eLearning users' satisfaction and intention to use, and indirectly on perceived usefulness.

The consensus from the participants was that conducting blended learning in the face-to-face classroom using LMS-CIDOS is difficult due to the poor condition of the hardware that is already aged and quite slow to process the system. The speed to access the system from one desktop to another is not the same and resulted in the user having to wait longer for the system to load which caused a delay to start the lesson. As an alternative to the incompatible hardware, lecturers will ask the students to use their own device yet students have to rely on unstable internet connection due to the location of the class and availability of the data coverage. This finding is consistent with the research literature in regard to the infrastructure differences and limitations (Mozelius & Rydell, 2017; Cheok et al., 2017; Chung et.al, 2020)

The complex system setting and content organization are found to be the center of perception to the ease of use towards LMS-CIDOS. Lecturers in this study complained that the setting is too complicated and they are distracted with too many buttons and procedures to set up an activity. It is hard to get the upload process done due to so many layers of information to fill and preference setting

to be done like module setting, restrict access, submission setting, feedback types, group submission setting, tag, notification and competencies before it can be published and displayed for the students' view. This setting requires users to pay attention to details that will confuse them especially to those who are not IT savvy and not familiar with technical terms. The participants claimed that they would prefer it if the system has less setting to enable them handle the task better. This condition is referred to as 'overload technology' by Zanjani et. al, (2017) which implies to the overload of the technology availability. Meanwhile,

In the same theme, participants also point out that the transition from LMS-CIDOS 2.0 to LMS CIDOS 3.5 has taken away their autonomy to manage their own platform. To save space and standardize the content of the lesson, LMS-CIDOS 3.5 limits the number of platforms to be formed which means only one platform will be developed and it contains assigned lecturers as administrators and classes enrolled for the subject. Like handling face-to-face class where lecturers have full authority to control the lesson, the experience should be the same as handling online learning. Likewise, availability to keep record of past teaching activity should be part of the system to enable instructors to reflect on their teaching progress. Cited in Demir et. al, (2018) LMS plays a crucial role for teachers for the administration, tracking student records, presentation of documents, reporting and delivery of course materials to the students. Having all teaching files stored and trackable is one of the core assets of online education that helps instructors to administer and easily make teaching reflection. This is in line with the finding from a research done by Kite et, al. (2020) where lecturers in the study use the LMS predominantly as the information repository. Findings from this study uncover the fact that lecturers perceive the system to be very useful if it could store their teaching records like marks, past activities, student's assignments and so on as they can look back at their content and make adjustments to improve the lesson. It is important for the authority to make adjustments on the system capability so its function can be utilized to the maximum.

5.2 Instructor Factor

The second factor that presents the challenges of conducting blended learning using LMS-CIDOS is the instructor factor. Kamla and Hafedh (2010) expanded the instructor factor to five elements which are self-efficacy, attitude towards LMS, experience, teaching style and personal innovativeness. Lack of skill to encourage active communication when teaching using LMS-CIDOS is among the concerns brought up by the lecturers during the interview. They were aware that teaching through online requires them to pay attention to individual's needs in order to build attachment with the online learning community. Kebritchi et. al, (2017) thinks that in order to be effective in the classroom, online teachers must be excellent listeners and communicators, as well as devote time and effort to building community and engaging students with thought-provoking questions to help move discussions forward. To note, the instructor's ability to promote interactive discussion in the classroom, develop online community participation, and effectively deliver the proper lesson makes all the difference in student learning outcomes. Instructors must be able and willing to provide quick feedback, as well as maintain a safe environment in which students feel appreciated and free to share their views. (Zanjani et. al, 2017). The lecturers' self-efficacy in using the system to teach digital literacy skills and their teaching style need to be enhanced to enable them to handle the lesson confidently and able to produce active communication between both the lecturers and students. Therefore, guidance from the expert and training on teaching online should be provided to boost the lecturers' role and competencies of online instructors.

Inadequate time to balance between teaching management and side work are among the challenges that slow down the execution of eLearning using LMS-CIDOS. Alebaikan et.al (2010) claimed that the time required by instructors who implement blended courses will increase due to the time spent learning new techniques and skills, as well as the need to redesign the course. With the average teaching hour of 24-28 hours per week and average of 6 to 7 classes to teach. It is hard to fully implement blended learning and give focus and attention to the students. As cited in (Alebaikan et. al, 2010; Graham, Allen, and Ure, 2003) Instructors' schedules will have to be adjusted to accommodate more frequent interaction with students, who expect more frequent feedback in online environments than in face-to-face settings. Lecturers should be allocated with appropriate teaching hours to implement eLearning if the authority wants to have the blended learning environment to be efficient to both

lecturers and students. It is impossible to produce a quality teaching with a task full at hand. It is environmentally challenged by more intensive teaching timeframes (Roddy et. al. 2017). Workshops on time management in relation to blended learning should be included as well, to assist lecturers in planning and organizing strategies for improved teaching implementation.

5.3 Organization Factor

The organization factor stated in the proposed framework is further expanded to motivations, technology alignment, organization support, technical support and training. The interview revealed that most of the lecturers received basic training on technical aspects to manoeuvre the system. Hence, provided training is perceived as less helpful to reach their satisfaction of using the LMS-CIDOS in teaching. Majority of them learned through self-exploration, observation and colleague sharing on how to conduct learning using LMS-CIDOS. Although they are confident in using the system, they revealed that lack of ideas to teach the subject using the system give them the perception that the system is not being helpful. The lecturers' motivation is somehow affected by the nonaggressive support and repeated workshop content supplied to them every semester. They are looking for workshops that could add to their teaching skills at the same time utilizing the LMS-CIDOS. Support from the organization is in terms of training and lecturers' professional development should be continuous and updated according to the technology advancement (Alenezi, 2018). This view is also supported by few others research on related to online learning execution that urge the institution to organise more training sessions to aid the lecturers' knowledge and be more effective in delivering online learning contents (Chung et. al, 2020). Institutions cannot just assume instructors are able to absorb changes quickly and let the responsibility to explore on the instructors' shoulder to achieve high-quality education.

6. Conclusion

There are numbers of studies on the related topic that discovered the positive outcomes of blended learning implementation in higher education institutions (Zanjani et. al; 2017; Hadley, 2019; Kite et. al, 2020) at the same time quite numbers are also revealing the challenges faced by the institution to execute the concept (Mokhtar, 2016; Mozelius & Reydell, 2017; Kebritchi et. al, 2017; Alenezi et. al, 2018). The authorities, particularly the Polytechnic and Community College Department, must recognize and comprehend the concerns and problems that impede the process of obtaining high-quality education for technical colleges. The management needs to have proper planning to provide adequate IT infrastructure, technical support on the use of online platforms for both educators and students, training for educators to operate online learning platforms in order to facilitate online learning (Sandra et.al, 2020). Through the results gained from this study it is recommended that the transition of blended learning environment in polytechnic institution is facilitated by providing the following; reliable hardware and bandwidth for easy learning access, online instructor training programs, teaching modules and workshop given by experts of content and technologies, improved and more user-friendly tools in the LMS-CIDOS, additional features for communication medium in LMS-CIDOS, upgraded server for information repository and courses for planning and time management for online instructors. Improving the aforementioned ideas indirectly could add point to the usefulness of the LMS-CIDOS system as medium to carry out the blended learning concept in polytechnic and community college institutions. As cited in Cigdem & Topcu (2015) The instructors' desire to use technology into their teaching activities is bolstered by its perceived usefulness. This paper identifies areas that could be discovered for future research. More modules and suitable instructional design framework for communicative English areas could be explored to enhance student's digital literacy skills particularly through the medium of LMS.

7. References

- Abu Seman, S., Hashim, M., Mohd Roslin, R., & Mohd Ishar, N. (2019). Millennial Learners' Acceptance and Satisfaction of Blended Learning Environment. *Asian Journal Of University Education*, 15(3), 129-141. doi:10.24191/ajue.v15i3.7845
- Ahmad, M. K., Adnan, A. H. M., Yusof, A. A., Mohd Kamal, M. A., & Mustafa Kamal, N. N. (2019). Using New Technologies to Teach English in Malaysia - Issues and Challenges. In MNNF Network (Ed.), *Proceedings of the International Invention, Innovative & Creative (InIIC) Conference, Series 1/2019* (pp. 203-207). Mahkota Hotel, Melaka. Senawang, NS: MNNF Network
- Alebaikan, R., & Troudi, S. (2010). Blended Learning in Saudi Universities: Challenges and Perspectives. *ALT-J, Research in Learning Technology*, Vol.18, No. 1, 49-59. DOI: 10.1080/09687761003657614
- Alenezi, A. (2018). Barriers to Participation in Learning Management Systems in Saudi Arabian Universities. *Education Research International*, Vol. 2018, Article ID 9085914, 8 pages <https://doi.org/10.1155/2018/9085914>
- Ashrafzadeh, A., & Sayadian, S. (2015). University instructors' concerns and perceptions of technology integration. *Computers in Human Behavior*, 49, 62–73. doi:10.1016/j.chb.2015.01.071.
- Bere, A., Deng, H., & Tay, R. (2018). Investigating the Impact of eLearning Using LMS on the Performance of Teaching and Learning in Higher Education. 2018 IEEE Conference on e-Learning, e-Management and e-Services (IC3e), 6-10. doi:<https://doi.org/10.1109/ic3e.2018.8632648>.
- Blee, K. M., & Taylor, V. (2002). Semi-Structured Interviewing in Social Movement Research. In B. Klandermans and S. Staggenborg (Eds.), *Method in Social Movement Research*, pp. 92-117. Minneapolis, London; University of Minnesota Press.
- Chaubey, D. S., & Kala, D. (2015). Attitude of Faculty Members Towards Faculty Development Programs and Their Perceived Outcomes. *Pacific Business Review International*, Volume 8(2), 21-30. Retrieved from: http://www.pbr.co.in/2015/2015_month/August/2.pdf
- Cheok, M. L., Wong, S. L., Ayub, A. F., & Mahmud, R. (2017). Teachers' Perceptions of e-Learning in Malaysian Secondary Schools. *Malaysian Online Journal of Educational Technology*, 5(2), 20-33.
- Chung, E., Subramaniam, G., & Christ Dass, L. (2020). Online Learning Readiness Among University Students in Malaysia Amidst Covid-19. *Asian Journal Of University Education*, 16(2), 45-58. doi:10.24191/ajue.v16i2.10294
- Cigdem, H., & Topcu, A. (2015). Predictors of Instructors' Behavioral Intention to Use Learning Management System. *Computers in Human Behavior*, Volume 52 Issue C, pp. 22–28. <https://doi.org/10.1016/j.chb.2015.05.049>
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), pp.319–340. <https://doi.org/10.2307/249008>
- Ellis, R. (2010). Second Language Acquisition, Teacher Education and Language Pedagogy. *Language Teaching*, 43(2), 182-201. doi:10.1017/S0261444809990139
- Fung, H., & Yuen, A. (2012). Factors Affecting Students' and Teachers' Use of LMS – Towards a Holistic Framework. In: Cheung S.K.S., Fong J., Kwok L.F., Li K., Kwan R. (Eds.), *International Conference on Hybrid Learning 2012: Hybrid Learning*. Lecture Notes in Computer Science, vol 7411, pp. 306-316. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-32018-7_29
- Goh, W.W., Hong, J. L., & Gunawan, W. (2014). Exploring Lecturers' Perceptions of Learning Management System: An Empirical Study Based on TAM. *International Journal of Engineering Pedagogy (iJEP)*, Volume 4, Issue 3, 48-54. DOI:10.3991/ijep.v4i3.3497
- Hadley, C.M. (2019). *An Investigation of Faculty Perceptions of Online Teaching: Barriers and LMS Satisfaction* (Publication No.0000-0002-6124-7715) [Doctoral dissertation, Texas Tech University]. Retrieved From: <https://hdl.handle.net/2346/85941>
- Hashim, H. (2018). Application of technology in the digital era education. *International Journal of Research in Counseling and Education*, 2(1), 1–5. DOI: 10.24036/002za0002

- Islam, N., Beer, M., & Slack, F. (2015). E-Learning Challenges Faced by Academics in Higher Education: A Literature Review. *Journal of Education and Training Studies Vol. 3*, No. 5. ISSN 2324-805X E-ISSN 2324-8068. DOI: <https://dx.doi.org/10.11114/jets.v3i5.947>
- Jamal, H., & Shanaah, A. (2011). *The Role of Learning Management System in Education Environment: An Exploratory Case Study*. LAP Lambert Academic Publishing Theodor-Heuss-Ring 26 Koln; Germany. ISBN: 978-3-8484-1873-2.
- Kamla, A. A. B., & Hafedh, A. (2010). Instructors' Acceptance of Learning Management Systems: A Theoretical Framework. *Communications of the IBIMA*, 1-10. DOI:10.5171/2010.862128
- Kasim, N.N.M. & Khalid, F. (2016). Choosing the Right Learning Management System (LMS) for the Higher Education Institution Context: A Systematic Review. *International Journal of Emerging Technologies in Learning (iJET)*, 11(06):55. DOI: <https://doi.org/10.3991/ijet.v11i06.5644>
- Kebritchi, M., Lipschuetz, A., & Santiago, L. (2017). Issues and Challenges for Teaching Successful Online Courses in Higher Education. *Journal of Educational Technology Systems*, 46(1), 4–29. doi:10.1177/0047239516661713
- Kite, J., Schlub, T.E., Zhang, Y., Choi, S., Craske, S., & Dickson, M., (2020). Exploring Lecturer and Student Perceptions and Use of A Learning Management System in a Postgraduate Public Health Environment. *E-Learning and Digital Media*, 17(3), 183-198. <https://doi.org/10.1177/2042753020909217>
- Lasanthika, WJAJM & Tennakoon, WDNSM (2019). Assessing the Adoption of Learning Management Systems in Higher Education (September 20, 2019). *Global Journal of Business and Social Science Review*, 7(3), 204–209. Available at SSRN: <https://ssrn.com/abstract=3460992>
- Makzin, Norfadzilah (2016). *Pelaksanaan Pembelajaran Melalui Curriculum Information Document Online System (CIDOS) Dalam Memperkasakan Pengajaran Pensyarah Di Politeknik. Universiti Tun Hussein Onn Malaysia*. http://eprints.uthm.edu.my/id/eprint/9087/1/NORFADZILAH_MAKZIN.pdf
- Ministry of Education Malaysia (2015). *Malaysia Education Blueprint 2015-2025 (Higher Education)*. Kementerian Pendidikan Malaysia. Retrieved from: [http://www.moe.gov.my/cms/upload_files/files/3_%20Malaysia%20Education%20Blueprint%202015-2025%20\(Higher%20Education\).pdf](http://www.moe.gov.my/cms/upload_files/files/3_%20Malaysia%20Education%20Blueprint%202015-2025%20(Higher%20Education).pdf)
- Mohamad, S. N. M., Salam, S., & Bakar, N. (2014). Lecturers' Perceptions and Attitudes Towards the Usage of Online Learning at Polytechnic. *International journal Journal of Science Commerce and Humanities, Volume No 2*, No 1, pp. 169-172. Retrieved from: https://www.researchgate.net/publication/292979488_Lecturers'_Perceptions_and_Attitudes_Towards_the_UsageofOnline_Learning_at_Polytechnic
- Mozelius, P., & Rydell, C. (2017). Problems Affecting Successful Implementation of Blended Learning in Higher Education - The Teacher Perspective. *International Journal of Information and Communication Technologies in Education*, 6(1): 4-13, ISSN 1805-3726. DOI: 10.1515/ijicte-2017-0001
- Ouadoud, M., Chkouri, M. Y., Nejjari, A. (2018). Learning Management System and The Underlying Learning Theories: Towards A New Modeling of an LMS. *International Journal of Information Science & Technology (iJIST)*, 2(1), 25-33.
- Roddy, C., Amiet, D. L., Chung, J., Holt, C., Shaw, L., McKenzie, S., Garivaldis, F., Lodge, J. M., & Mundy, M. E. (2017). Applying Best Practice Online Learning, Teaching, and Support to Intensive Online Environments: An Integrative Review. *Frontiers in Education*, 2(59). <https://doi.org/10.3389/educ.2017.00059>
- Rodzi, N. M., Kumar, J. A., Osman, S., & Masyukri, E. S. (2019). *Exploring Lecturers' Acceptance of Learning Management Systems in Malaysian Higher Educational Institution*. ICE 2019, September 28-30, Purwokerto, Indonesia. DOI 10.4108/eai.28-9-2019.2291064
- Sim, S., Sim, H., & Quah, C. (2021). Online Learning: A Post Covid-19 Alternative Pedagogy For University Students. *Asian Journal Of University Education*, 16(4), 137-151. doi:10.24191/ajue.v16i4.11963
- Soliman, N. A. (2014). Using E-Learning to Develop EFL Students' Language Skills and Activate Their Independent Learning. *Creative Education*, 05(10), 752-757. <http://dx.doi.org/10.4236/ce.2014.510088>

- Suppatsereee, S., & Dennis, N. K. (2010). The Use of Moodle for Teaching and Learning English at Tertiary Level in Thailand. *The International Journal of the Humanities: Annual Review*, 8(6), 29-46. DOI:10.18848/1447-9508/CGP/v08i06/42964
- Taherdoost, H. (2018, October 5-6). A Review of Technology Acceptance and Adoption Models and Theories. *Procedia Manufacturing* 22:960-967. 11th International Conference Interdisciplinarity in Engineering, INTER-ENG 2017, Tirgu-Mures, Romania. DOI:<https://doi.org/10.1016/j.promfg.2018.03.137>
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and A Research Agenda on Interventions. *Decision Sciences*, 39 (2), 273–315. DOI:10.1111/j.1540-5915.2008.00192.x
- Venkatesh, V., Morris, M.G., Davis, F.D., & Davis, G.B. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly: Management Information Systems*, 27(3), 425-478. <https://doi.org/10.2307/30036540>
- Washington, G. Y. (2019). The Learning Management System Matters in Face-to-Face Higher Education Courses. *Journal of Educational Technology Systems*, 48, 255-275. doi:10.1177/0047239519874037
- Xhaferi, G., Bahiti, R., & Imeri, F. (2015). Integrating LMS in Teaching and Learning Process in State University of Tetovo: Issues and Challenges. *International Scientific Conference Computer Science'2015*.