

THE ACCEPTANCE OF E-LEARNING IN TVET EDUCATION: A CASE STUDY OF CULINARY ARTS STUDENTS

Noor Atika binti Mazlan¹
Wan Rusni binti Wan Ismail²
Noraini binti Rahim³
Nor Hafizah binti Mazlan⁴

¹ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA Cawangan Pulau Pinang, Pulau Pinang, Malaysia

Email: aitikamzln11@gmail.com

² Faculty of Hotel and Tourism Management, Universiti Teknologi MARA Cawangan Pulau Pinang, Pulau Pinang, Malaysia

Email: rusni.wi@uitm.edu.my

³ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA Cawangan Pulau Pinang, Pulau Pinang, Malaysia

Email: noraini970@uitm.edu.my

⁴ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA Cawangan Pulau Pinang, Pulau Pinang, Malaysia

Email: hafizahmazlan@uitm.edu.my

Article history

Received date : 1-3-2022

Revised date : 2-3-2022

Accepted date : 25-6-2022

Published date : 1-8-2022

To cite this document:

Mazlan, N. A., Wan Ismail, W. R., Rahim, N., & Mazlan, N. H. (2022). The Acceptance Of E-Learning in TVET Education: A Case Study of Culinary Arts Students. *Journal of Islamic, Social, Economics and Development (JISED)*, 7(46), 215 - 226.

Abstract: *The COVID-19 epidemic gives a huge impact on educational sectors across the world. Due to Movement Control Order (MCO), all classes were advised to be executed through e-learning or open and distance learning (ODL) since students and lecturers were physically separated and a face-to-face connection was difficult. It is quite challenging to adopt e-learning for TVET or laboratory courses. Hence, this research aims to investigate the relationship between perceived usefulness, perceived ease of use, perceived self-efficacy, and intention to use an e-learning by using the structural model based on the Technology Acceptance Model (TAM). 140 respondents consisted of students from UiTM Permatang Pauh campus who enrolled in culinary art courses participate in this survey. Pearson correlation was used to measure the relationship between the variables. The results show a significant relationship between all the independent variables which are perceived usefulness, perceived ease of use, perceived self-efficacy with the dependent variable which is an intention to use e-learning. The study's findings would be valuable to the university, particularly to UiTM Hospitality and Tourism faculty and associated department, in terms of improving and maintaining the system, as well as ensuring that it is fully utilized as an educational platform by students and educators.*

Keywords: *E-learning, ODL, TVET, Technology Acceptance Model*

Introduction

In January 2020, The World Health Organization (WHO) reported the discovery of a new coronavirus, known as the COVID-19 outbreak which is one of the infectious respiratory diseases (Wan et al., 2020). In early March 2020, this virus has spread fast across the world (Marinoni et al., 2020) and Malaysia is one of the Asian countries that has been affected by the COVID-19 pandemic (Elengoe, 2020). Due to this, the Malaysian government has implemented Movement Control Order (MCO) as a mitigation measure to prevent the spread of COVID-19 (Tang, 2020). Education is one of the sectors in Malaysia that are paralyzed where teaching and learning activities are restricted due to the closure of all education sectors including universities. The Ministry of Education has announced the implementation of e-learning to ensure the continuity of teaching and learning activities in Malaysia (Rahim et al., 2020).

Technical and Vocational Education and Training (TVET) education is also affected due to this pandemic (Hayashi et al., 2021)(Erliana et al., 2021)(Wan et al., 2020). E-learning seems to be the only choice for the education sectors at that time despite the core of TVET education itself require for the face to face involvement and hands-on class (Erliana et al., 2021). Before the pandemic, TVET education is one of the education fields that rely heavily on face-to-face interaction and hands-on practical sessions, hence the adoption of technology to deliver the teaching content is scarce. Culinary arts are one of the categories of TVET courses. According to (Orlowski et al., 2021) when shifting hands-on food and beverage laboratories to a total online platform, there are particular issues with student engagement. Many other common challenges are faced by students such as internet connection, lack of devices, mental health issues, and an uncondusive environment (Abd et al., 2016)(Baticulon et al., 2021). Therefore, this study explores the acceptance of e-learning towards culinary courses by addressing the factors using the Technology Acceptance Model (TAM) such as perceived usefulness, perceived ease of use, and perceived self-efficacy that will influence the intention to use and contribute to the acceptance of online learning among culinary students. This study will involve degree students from UiTM Cawangan Permatang Pauh who takes culinary arts courses as they participate in using e-learning throughout the pandemic.

Literature Review

E-learning education during the pandemic

E-learning has been widely used in universities worldwide. E-learning is defined as everything that is supplied and enabled by electronic technology for the express purpose of education (Srivastava, 2019). Recently, all around the world has been affected by the COVID-19 pandemic and it has disrupted academic intuitions where many schools and universities are transitioning away from face-to-face classes to fully online or blended learning models due to social distancing practice to curb the transmission of the virus (Adedoyin & Soykan, 2020). Since then, university and college academics and support personnel have been required and urged to work from home while adhering to the COVID-19 standards as normal classroom-based learning is prohibited by COVID-19 restrictions (Mseleku, 2020).

Many studies have been conducted to ensure the quality of e-learning. For instance, in a case study in Malaysia, more than half of those respondents said they might not proceed with online learning next semester if given the option because of students' major concerns such as insufficient internet connections and inadequate broadband data (Chung et al., 2020). Another study was conducted by (Zainol et al., 2021) where the authors stated that middle-income parents find it difficult to afford their children's online learning programs such as to provide

electronic devices and broadband data. Other related cases in Sarawak, where students at UiTM Sarawak have expressed difficulty in getting access to the Internet for online study, particularly those who live in rural regions (Sulaiman & Halamy, 2021).

Technical Vocational Education and Training (TVET) Students

Technology Acceptance Model (TAM), which was first established by (Davis et al., 1989), is a well-known concept for describing how individual actions and attitudes influence technology usage when other external variables are present (Hanif et al., 2018). TAM defines the causal connections between user motivation such as perceived usefulness (PU), perceived ease of use (POEU), and attitudes toward technology (A) and the outcome variables which involved behavioral intentions and technology use (BI) (Ang et al., 2021). In this study, attitude will be excluded. Many types of research which employ the TAM components PU, PEOU, and IU tend to rule out Attitude from a study's analysis as the direct connection between belief and intention is not adequately explained by attitude (Rahmi et al., 2018). This statement is also stated in (Abdullah et al., 2016) because of its limited relevance between the variables, Attitude has been removed from the model in subsequent research. As a result, attitude is not taken into consideration in this study.

Perceived usefulness

Perceived usefulness can be defined as the degree to which a person feels that adopting a certain type of e-learning improves his or her learning performance (Toni et al., 2012). According to (Keržič et al., 2019) recognizing the elements that influence perceived usefulness can aid in the enhancement of e-learning systems' efficacy and efficiency. Thus, students are more inclined to utilize an e-learning system if they feel it will improve their comprehension of learning (Ang et al., 2021). If not, they will struggle to use the technology and confront stress. Thus, the higher the perceived usefulness of an e-learning system, the more positive the intention to use it, and hence the greater the chance of it being used.

H1: The perceived usefulness of e-learning has a relationship with the intention to use e-learning among culinary students.

Perceived ease of use

Reference (Salloum, 2018) mentioned that the degree to which a student believes that utilizing an e-learning system will not involve a lot of work and will be simple to use is referred to as perceived ease of use (PEOU). Perceived usefulness is directly influenced by perceived ease of use, and both influence the behavioral intention to use (Osman et al., 2016). Several studies have demonstrated that the perceived ease of use (PEOU) has a favorable association with the intention to use (IU), both directly and indirectly (Mohammadi, 2015)(Salloum, 2018)(Chang et al., 2007). The perceived simplicity of use has a big impact on whether or not people would utilize e-learning based on findings by (Ibrahim et al., 2017). Reference (Mohammadi, 2015) stated that the higher the perceived ease of use of an e-learning system, the greater positive the intention to use, and as a result the more likely it will be applied by someone.

H2: Perceived ease of use of e-learning has a relationship with the intention to use e-learning among culinary students

Perceived self-efficacy

In a significant number of researches, self-efficacy is employed as a common external component of TAM (Hanif et al., 2018). Perceived self-efficacy is described as the confidence

or belief in one's ability to determine the level of engagement in activities (Ang et al., 2021). Self-efficacy is closely linked to users' ideas about technology in the context of e-learning (Saeed et al., 2021). (Abdullah et al., 2016) mentioned that students who have a high rate of e-learning self-efficacy are more likely to use it, whereas students who have a low rate of e-learning self-efficacy are less willing to use it. Hence, self-efficacy is believed to have a positive relationship with the intention to use e-learning.

H3: Perceived self-efficacy of e-learning has a relationship with the intention to use e-learning among culinary students.

Intention to use

Reference (Davis et al., 1989) defined behavioral intention to use as the degree to which a person has made deliberate intentions to engage in or refrain from engaging in a specific future activity (Budu et al., 2018) and this is viewed as a consideration in deciding whether or not to adopt a technology (Al-Rahmi et al., 2018). Reference (Al-Rahmi et al., 2018) stated that it is anticipated that students' behavioral intention to utilize an E-learning system will enhance their learning performance.

Methodology

A quantitative method is used to gain accurate results where primary data are collected through the distribution of an online questionnaire to the respondents. To achieve the objective of this study, the target respondent involved is degree students who enrolled in culinary art courses in UiTM Permatang Pauh who are currently taking their classes through Online Distance Learning (ODL). According to the Department of Academic Affairs UiTM Cawangan Permatang Pauh, there are 211 Degree students enrolled in culinary arts courses. The sampling method of (Krejcie & Morgan, 1970) will be utilized to obtain a certain number of respondents for this study. As this calculation is based on the fundamental principles for the calculated sample size utilizing the guidelines from (Krejcie & Morgan, 1970), a sample size of 136 respondents is needed. Furthermore, non-probability sampling is used where purposive sampling techniques are chosen and seems the most suitable sampling technique for this study. This method allows the selection and elimination of target respondents through screening questions compare to another non-probability sampling. Based on this study, only culinary arts students are required to answer this questionnaire and other faculty students are not allowed. Thus, this method becomes superior among other non-probability methods (Barratt et al., 2015).

Finding

Demographic profile

The demographic result shows there was a difference in the numbers of respondents and the majority of the respondents involved in this study were female which is 101 respondents (72.1%). The major respondents involved in this study are aged between 18-22 (54.3%) and 23-27 (43.6%). The majority of students in semester five (45%) and six (27.9%) were involved to be respondents in this study. Furthermore, students seem to prefer conducting online classes for theory subjects (87.9%) instead of a practical subject (12.1%).

Descriptive analysis for all construct

Reference (Davis et al., 1989) defined behavioral intention to use as the degree to which a person has made deliberate intentions to engage in or refrain from engaging in a specific future activity (Budu et al., 2018) and this is viewed as a consideration in deciding whether or not to

adopt a technology (Al-Rahmi et al., 2018). Reference (Al-Rahmi et al., 2018) stated that it is anticipated that students' behavioral intention to utilize an E-learning system will enhance their learning performance.

Table 1: Descriptive Analysis

Items	N	Mean	Std. Deviation
Perceived usefulness	140	16.243	4.108
Perceived ease of use	140	13.707	3.024
Perceived self-efficacy	140	16.550	4.161
Intention to use	140	10.714	4.236

Pearson Correlation

Table II showed that there is a strong relationship between perceived usefulness and the intention to use e-learning, where the correlation is $r = 0.687$. Moreover, the result also revealed that there is still a strong relationship between perceived ease of use and the intention to use e-learning where the correlation is $r = 0.541$. Last but not least, perceived self-efficacy also shows a strong relationship to the intention to use e-learning with a correlation $r = 0.617$. Table II below shows that perceived usefulness, perceived ease of use, and perceived self-efficacy have a relationship with the intention to use e-learning among culinary students.

Table 2: Pearson Correlation

Correlations		Perceived Usefulness	Perceived ease of use	Perceived self-efficacy	Intention to use
Perceived usefulness	Pearson Correlation	1	.562**	.634**	.687**
	Sig. (2-tailed)		.000	.000	.000
	N	140	140	140	140
Perceived ease of use	Pearson Correlation	.562**	1	.625**	.541**
	Sig. (2-tailed)	.000		.000	.000
	N	140	140	140	140
Perceived self-efficacy	Pearson Correlation	.634**	.625**	1	.617**
	Sig. (2-tailed)	.000	.000		.000
	N	140	140	140	140
Intention to use	Pearson Correlation	.687**	.541**	.617**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	140	140	140	140

a. **. Correlation is significant at the 0.01 level (2-tailed)

Preferred e-learning method by students

To further understand the current issues, additional questions regarding e-learning have been asked such as methods that students think is effective in conducting theory and practical subjects and methods to conducting quiz or exam through e-learning. The figures below show the result of these questions.

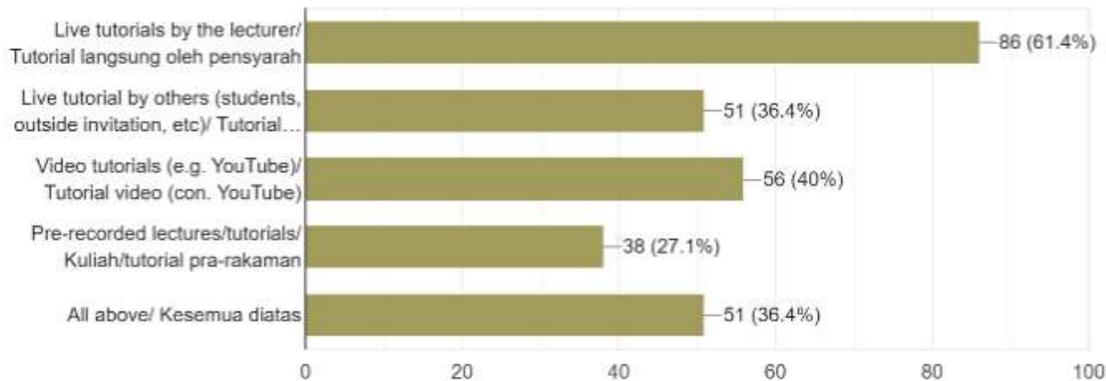


Figure1: Effective methods for conducting practical subjects online

Based on Figure 1, the result shows that students preferred to conduct practical subjects online using live tutorials by the lecturers (61.4%), followed by video tutorials (e.g. YouTube) (40%), live tutorials by others (36.4%), pre-recorded lecturers or tutorials (27.1%). Some of the students also agreed that all methods are effective methods for conducting practical subjects online (36.4%).

Moreover, based on Figure 2, the result revealed that students agreed, live lectures via Google meet or Zoom (63.6%) is an effective method to deliver theory subjects online. Students also agreed, all methods are effective to use when conducting theory subjects online (38.6%), followed by instruction via PowerPoint (35.7%), use online application (33.6%), and modules (22.1%).

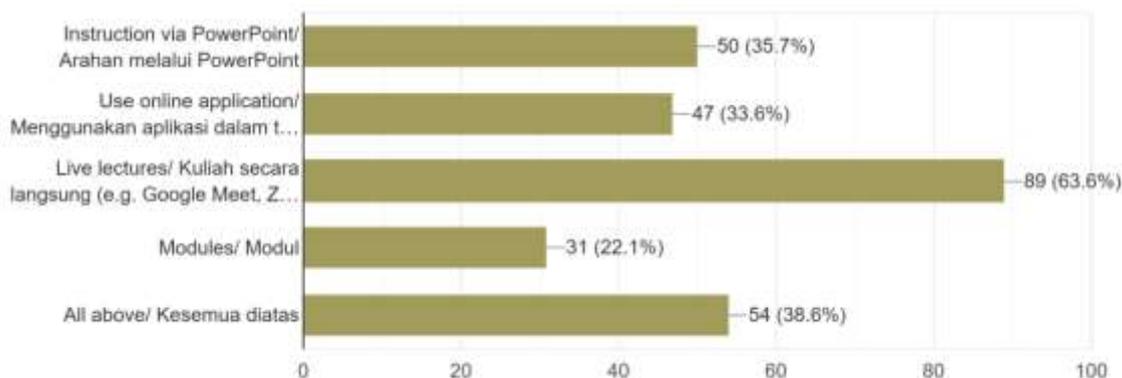


Figure 2: Effective methods for conducting theory subjects online

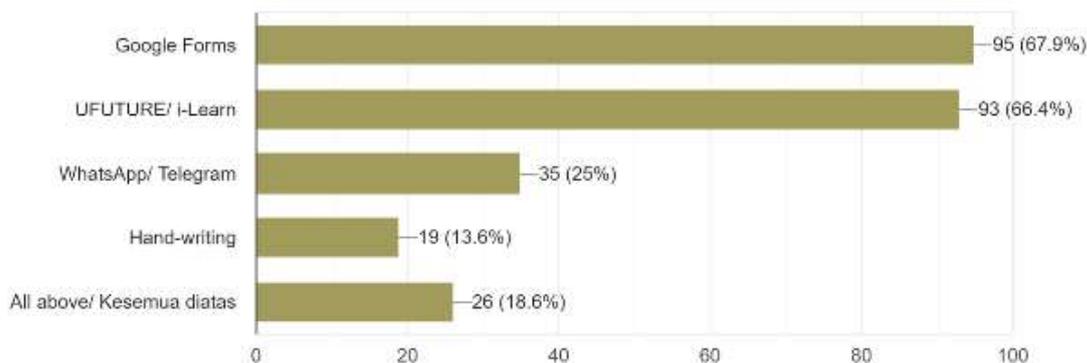


Figure 3: Effective methods for conducting quiz/exam online

Last but not least, from the result shown in Figure 3 above, the majority of the students agreed that using Google forms (67.9%) and UFUTURE/i-Learn (66.4%) in conducting quizzes or exams online is the most effective methods, followed by WhatsApp/Telegram (25%) and all methods (18.6%). Few students agreed that hand-writing (13.6%) is an effective method for conducting quizzes or exams online.

Discussion

From the result obtained, the strong relationship between perceived usefulness of e-learning and intention to use e-learning was similar to the previous study by (Ang et al., 2021) where it stated that perceived usefulness gives a big impact on the e-learning intention to be used where students are more persuaded to take the online course if they believe it will be beneficial to their studies. This statement is also supported by (Al-Rahmi et al., 2018) where students' intentions to utilize e-learning are positively affected when they discover that it is simple to use and beneficial. In addition, the learning materials have a significant impact on the perceived usefulness of e-learning. By understanding this element, it may increase the acceptance of e-learning in the context of perceived usefulness (Al-Rahmi et al., 2018).

Moreover, this study demonstrates that perceived ease of use has a strong relationship with the intention to use e-learning among culinary students and this result is similar to the previous study by (Osman et al., 2016)(Salloum et al., 2019). However, few studies showed that perceived ease of use is an insignificant effect on the intention to use e-learning. (Ang et al., 2021) stated that students are might aware of how several social media networks work. As a result, whether or not the platform is simple to use has little impact on their desire to utilize it. (Budu et al., 2018) also agreed with the statement where mention that perceived ease of use does not affect the intention to use e-learning as users have gained sufficient expertise with the systems. In this situation, students might feel difficult to adjust to e-learning as they need to comply with the practical class that needs hands-on lectures from the instructor.

Furthermore, the result showed that perceived self-efficacy has a strong relationship with intention to use e-learning and this is aligned with the previous study by (Budu et al., 2018); (Al-Rahmi et al., 2018); (Abd et al., 2018). When students feel they can succeed in online classes, they find online learning tools to be easier to use and more beneficial (Abd et al., 2018). This statement aligned with a previous study by (Budu et al., 2018) where it mentions that e-learning self-efficacy may be viewed as an inherent motivating component that can help people self-regulate their motivation. To conclude, according to the findings, individuals' intention-to-use e-learning among culinary students in UiTM Penang strongly rely on perceived usefulness, perceived ease of use, and self-efficacy where it will favorably affect the usage of E-learning systems in higher education institutions.

In addition, from the result based on additional questions that have been provided in the online questionnaire, the majority of the students agreed that practical subjects should be conducted using live tutorials by lecturers. This is because hands-on subjects required particular steps that need to be followed by the students such as skills and methods (Erliana et al., 2021). This statement was aligned with a previous study by (Donkor, 2010) where practical skill training involves the use of detailed instructions to allow learners to follow the process and then reproduce the skill. Secondly, video tutorials (e.g. YouTube) are agreed to be the second effective method to deliver practical subjects online. Reference (Almurashi, 2016) stated that using YouTube videos in the classroom is advantageous and useful for instructors who are interested in using technology in the classroom. Video lectures may be replayed as many times

as needed, which is very valuable for gaining a thorough comprehension or studying for examinations (Brockfeld et al., 2018).

The second question regarding theory subjects, most of the students agreed that live lectures are effective methods to deliver theory subjects online, and this result similar to a previous study that has been mentioned by (Brockfeld et al., 2018) which the students believed that the live lectures had taught them more compared to video recordings. Besides, audio and video conferencing make it simpler to establish a social presence and encourage more spontaneous interactions. However, the universities need to consider other issues such as internet connectivity as this seems to be the major challenge faced by the students according to (Chung et al., 2020). The second method that students agreed to be effective in delivering theory subjects online is through instruction via PowerPoint. PowerPoint provides a fantastic and effective tool for improving the delivery of a variety of courses and modules. However, the previous study by (Baker et al., 2018) mentioned that the use of PowerPoint had little impact on learning and the authors suggest to the instructor to consider how, when, and why before using PowerPoint as teaching tools.

Last but not least, students believed that using Google forms and UFUTURE/i-Learn platform is effective tools in conducting quizzes or exams online and this result is aligned with a previous study by (Alharbi et al., 2021) where the authors mentioned that Google Forms is a useful and effective tool for teachers and learners despite cheating problems might occur. Moreover, UFUTURE/i-Learn is thought to provide a positive learning environment in which teachers and students may improve their communication skills and participation in the learning process (Yusof et al., 2021). Furthermore, the previous study by (Zakaria et al., 2018) mentioned that the desire to use i-Learn is influenced by three factors: service quality, technical system quality, and content and information quality. Thus, faculty members should consider this matter to create a conducive learning experience for students and teachers.

Conclusion

In conclusion, this study's findings show that all four factors which are perceived usefulness, perceived ease of use, and perceived self-efficacy may be utilized to predict a student's desire to use an e-learning system. From the findings, students have a greater level of self-efficacy and rely entirely on the e-learning system to complete a task. Thus, the parties involved must continue to help and inspire students to utilize this system now and, in the future, to guarantee its efficacy. Considering what methods are effective in the perspectives of students is very important to maintain and improve the way to deliver theory and practical subjects as well as quizzes or exams through an e-learning system. The result of these findings can be referenced for universities especially for hospitality and tourism faculty of UiTM and related department to ensure the effectiveness of delivery e-learning in terms of practical courses. Some of the limitations found in this study are not being able to collect data from other courses in Hospitality and Tourism faculty as the time constrain and difficult to reach out to the respondent. Thus, future research should reach out to other courses as well to have a more accurate analysis about the acceptance of e-learning for Hospitality and Tourism faculty students.

Acknowledgment

We would like to acknowledge the Universiti Teknologi MARA Cawangan Pulau Pinang for supporting us through funding this publication to conference.

References

- Abd Aziz, N., Bin Musa, M., Ghul, Z., Abd Aziz, N., & Khalid, R. (2018). Determinants of UiTM Johor students' behavioral intention to use e-learning system. *International Journal of Engineering & Technology*, 7(3.35), 196-199. doi:<http://dx.doi.org/10.14419/ijet.v7i3.35.29296>
- Abd Rashid, Z., Kadiman, S., Zulkifli, Z., Selamat, J., Hisyam, M., & Hashim, M. (2016). Review of web-based learning in TVET: history, advantages, and disadvantages. *Int. J. Vocat. Educ. Train. Res*, 2(2), 7.
- Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in Human Behavior*, 63, 75–90. doi:10.1016/j.chb.2016.05.014
- Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, 1-13.
- Alharbi, A. S., Alhebshi, A. A., & Meccawy, Z. (2021). EFL Students' and Teachers' Perceptions of Google Forms as a Digital Formative Assessment Tool in Saudi Secondary Schools. <https://doi.org/10.24093/awej/call7.10>
- Almurashi, W. A. (2016). The effective use of YouTube videos for teaching the English language in classrooms as supplementary material at Taibah University in Alula. *International Journal of English Language and Linguistics Research*, 4(3), 32-47.
- Al-Rahmi, W. M., Alias, N., Othman, M. S., Alzahrani, A. I., Alfarraj, O., Saged, A. A., & Rahman, N. S. A. (2018). Use of e-learning by university students in Malaysian higher educational institutions: A case in Universiti Teknologi Malaysia. *Ieee Access*, 6, 14268-14276.
- Ang, W., Jedi, A., & Lohgheswary, N. (2021). Factors affecting the acceptance of open learning as an e-learning platform by technical course students. *Journal of Engineering Science and Technology*, 16(2), 903-918.
- Ansah, S. K., & Ernest, K. (2013). Technical and vocational education and training in Ghana: a tool for skill acquisition and industrial development. *Journal of Education and Practice*, 4(16), 172-180.
- Baker, J. P., Goodboy, A. K., Bowman, N. D., & Wright, A. A. (2018). Does teaching with PowerPoint increase students' learning? A meta-analysis. *Computers & Education*, 126, 376–387. doi:10.1016/j.compedu.2018.08.003
- Barratt, M. J., Ferris, J. A., & Lenton, S. (2015). Hidden populations, online purposive sampling, and external validity: Taking off the blindfold. *Field methods*, 27(1), 3-21.
- Baticulon, R. E., Sy, J. J., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., ... & Reyes, J. C. B. (2021). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. *Medical science educator*, 1-12.
- Brockfeld, T., Müller, B., & de Laffolie, J. (2018). Video versus live lecture courses: a comparative evaluation of lecture types and results. *Medical education online*, 23(1), 1555434.
- Budu, K. W. A., Yinping, M., & Mireku, K. K. (2018). Investigating the effect of behavioral intention on e-learning systems usage: Empirical study on tertiary education institutions in Ghana. *Mediterranean Journal of Social Sciences*, 9(3), 201-201.
- Chang, S.-C., & Tung, F.-C. (2007). An empirical investigation of students' behavioral intentions to use the online learning course websites. *British Journal of Educational Technology*, 0(0), 070625111823003–??? doi:10.1111/j.1467-8535.2007.00742.
- 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.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003
- Donkor, F. (2010). The comparative instructional effectiveness of print-based and video-based instructional materials for teaching practical skills at a distance. *International Review of Research in Open and Distributed Learning*, 11(1), 96-116.
- Elengoe, A. (2020). COVID-19 outbreak in Malaysia. *Osong public health and research perspectives*, 11(3), 93.
- Elhaty, I. A., Elhadary, T., Elgamil, R., & Kilic, H. (2020). Teaching university practical courses online during COVID-19 crisis: A challenge for eLearning. *J. Crit. Rev*, 7(8), 1-10.
- Erliana, H., Safrizal, S., Nuthihar, R., Luthfi, L., Wahdaniah, W., Jaya, I., & Herman, R. N. (2021). Perception of Vocational Students toward Online Learning during the Covid-19 Pandemic. *Jurnal Pendidikan Teknologi dan Kejuruan*, 27(1).
- Gillett-Swan, J. (2017). The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design*, 10(1), 20-30.
- Hanif, A., Jamal, F. Q., & Imran, M. (2018). Extending the technology acceptance model for use of e-learning systems by digital learners. *IEEE Access*, 6, 73395-73404.
- Hayashi, R., Garcia, M., & Jayasundara, H. D. S. A. (2021). COVID-19 Impact on Technical and Vocational Education and Training in Sri Lanka. <http://dx.doi.org/10.22617/BRF210081-2>
- Ibrahim, N. K., Al Raddadi, R., AlDarmasi, M., Al Ghamdi, A., Gaddoury, M., AlBar, H. M., & Ramadan, I. K. (2021). Medical students' acceptance and perceptions of e-learning during the Covid-19 closure time in King Abdulaziz University, Jeddah. *Journal of infection and public health*, 14(1), 17-23.
- Ibrahim, R., Leng, N. S., Yusoff, R. C. M., Samy, G. N., Masrom, S., & Rizman, Z. I. (2017). E-learning acceptance is based on the technology acceptance model (TAM). *Journal of Fundamental and Applied Sciences*, 9(4S), 871-889.
- Keržič, D., Tomažević, N., Aristovnik, A., & Umek, L. (2019). Exploring critical factors of the perceived usefulness of blended learning for higher education students. *PLOS ONE*, 14(11), e0223767. doi:10.1371/journal.pone.0223767
- Khan, M. A., Nabi, M. K., Khojah, M., & Tahir, M. (2020). Students' Perception towards E-Learning during COVID-19 Pandemic in India: An Empirical Study. *Sustainability*, 13(1), 1-1.
- Krejcie and Morgan, (1970). Krejcie and Morgan sampling method.
- Marinoni, G., Van't Land, H., & Jensen, T. (2020). The impact of Covid-19 on higher education around the world. *IAU Global Survey Report*.
- Mohammadi, H. (2015). Investigating users' perspectives on e-learning: An integration of TAM and IS success model. *Computers in Human Behavior*, 45, 359-374. doi:10.1016/j.chb.2014.07.044
- Mseleku, Z. (2020). A literature review of E-learning and E-teaching in the era of Covid-19 pandemic. *SAGE*, 57(52), 588-597.
- Neal, T. (2020). Strategies for Blended TVET in Response to COVID-19. *Commonwealth of Learning*.
- Orlowski, M., Mejia, C., Back, R., & Fridrich, J. (2021). Transition to Online Culinary and Beverage Labs: Determining Student Engagement and Satisfaction During COVID-19. *Journal of Hospitality & Tourism Education*, 1-13.
- Osman, Z., Alwi, N. H., & Khan, B. N. (2016). A study of mediating effect of attitude on perceived ease of use and students intention to use online learning platform among online learning institutions in Malaysia.

- Rahim, R., Tan, T., & Carvalho, M. (2020). Education Ministry: Country's online learning implementation strategy in final stages of preparation. *The Star*. <https://www.thestar.com.my/news/nation/2020/11/16/education-ministry-country039s-online-learning-implementation-strategy-in-final-stages-of-preparation>
- Rahmi, B. A. K. I., Birgoren, B., & Aktepe, A. (2018). A meta-analysis of factors affecting perceived usefulness and perceived ease of use in the adoption of e-learning systems. *Turkish Online Journal of Distance Education*, 19(4), 4-42.
- Rohman, M., Marji, D. A. S., Sugandi, R. M., & Nurhadi, D. (2020). Online learning in higher education during a covid-19 pandemic: students' perceptions. *Journal of Talent Development and Excellence*, 12(2s), 3644-3651.
- Saeed Al-Marouf, R., Alhumaid, K., & Salloum, S. (2021). The continuous intention to use e-learning, from two different perspectives. *Education Sciences*, 11(1), 6.
- Salloum, S. A. S. (2018). Investigating students' acceptance of E-learning system in Higher Educational Environments in the UAE: Applying the Extended Technology Acceptance Model (TAM) (Doctoral dissertation, The British University in Dubai).
- Salloum, S. A., Alhamad, A. Q. M., Al-Emran, M., Monem, A. A., & Shaalan, K. (2019). Exploring students' acceptance of e-learning through the development of a comprehensive technology acceptance model. *IEEE Access*, 7, 128445-128462.
- Schlenz, M. A., Schmidt, A., Wöstmann, B., Krämer, N., & Schulz-Weidner, N. (2020). Students' and lecturers' perspective on the implementation of online learning in dental education due to SARS-CoV-2 (COVID-19): A cross-sectional study. *BMC medical education*, 20(1), 1-7.
- Srivastava, P. (2019). Advantages & disadvantages of e-education & e-learning. *Journal of Retail Marketing & Distribution Management*, 2(3), 22-27.
- Sulaiman, S., & Halamy, S. (2021). ICT Education as a Catalyst to Bridge Digital Divide: The Roles of UiTM Sarawak in Rural Areas. *International Journal of Advanced Research in Education and Society*, 3(2), 174-181.
- Tang, A. (2020). Malaysia announces movement control order after a spike in Covid-19 cases (updated). *The Star*. <https://www.thestar.com.my/news/nation/2020/03/16/malaysia-announces-restricted-movement-measure-after-spike-in-covid-19-cases>.
- Toni Mohr, A., Holtbrügge, D., & Berg, N. (2012). Learning style preferences and the perceived usefulness of e-learning. *Teaching in Higher Education*, 17(3), 309–322. doi:10.1080/13562517.2011.640999
- Wan Hassan, W.A.S., Ariffin, A., Ahmad, F., Sharberi, S.N.M., Nor Azizi, M. I., Zulkiflee, S.N. (2020). COVID-19 Pandemic: Langkawi Vocational College Student Challenge in Using Google Classroom for Teaching and Learning (T& L). *International Journal of Advanced Trends in Computer Science and Engineering*, 9(3), 3299–3307. <https://doi.org/10.30534/ijatcse/2020/127932020>
- World Health Organization. (2021). About the virus: Coronavirus disease (COVID-19) pandemic. World Health Organization. <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/novel-coronavirus-2019-ncov>.
- Ye, H., & Law, R. (2021). Impact of COVID-19 on hospitality and tourism education: a case study of Hong Kong. *Journal of Teaching in Travel & Tourism*, 1-9.
- Yusof, F. H. binti M., Bakar, S. Z. S. binti A., Amat, D. W. binti, Othman, D. binti, Sumery, Z. binti, Sarijari, H. binti, & Qomariyah, A. (2021). ESL Teaching: Preferences on The Use of E-Learning Apps in Maximising Effective Teaching and Learning Experiences for Open and Distance Learning (ODL). *International Journal of Academic Research in Business and Social Sciences*, 11(6), 1123–1139.
- Zainol, S., Mohd Hussin, S., Othman, M., & Mohd Zahari, N. (2021). The challenges of online

learning faced by the b40 income parents in Malaysia. *International Journal of Education and Pedagogy*, 3(2), 45-52.

Zakaria, I., Anual, N., Halif, M. M., Jamaluddin, M., Ismail, W. S. A. W., & Ariffin, N. (2018). The Intention to Use on e-Learning Portal: A Case Study of i-Learn Portal at Universiti Teknologi MARA Cawangan Kelantan. *International Journal of Academic Research in Business and Social Sciences*, 8(11), 711–721