Exploring University Students' Acceptance of Open Distance Learning Using Technology Acceptance Model (TAM)

Alice Shanthi[1], Afni Anida Adnan[2], Nur Izzah Jamil[3], Alia Nadira bte Rosle[4], Evelyn Sharminnie[5]

[1,2&5] Academy of Language Studies,Universiti Teknologi MARA Negeri Sembilan Branch, Seremban Campus, [3&4]Faculty Of Computer and Mathematical Science, Universiti Teknologi Mara Negeri Sembilan Branch, Seremban Campus
Email: aliceshanthi@uitm.edu.my

Abstract
The technology acceptance model (TAM) can be used to study the success of Online Distance Learning (ODL) as a teaching and learning approach. ODL became the only tool available due to the Covid-19 pandemic, which disrupted the learning process in Malaysia and the world over. ODL took the place of traditional classrooms and created new chances for students and teachers to interact and communicate. This study investigates students' acceptance of ODL as an acceptable learning approach among undergraduates in Malaysia. This research makes three contributions. First, this research may aid in determining whether learners or users prefer ODL. Second, this research will aid in identifying the characteristics that significantly influence the intention to use ODL. Third, this research also provides insights into whether variables like perceived ease of use and perceived usefulness impact ODL acceptance as a learning tool. The findings reveal that ODL was not a popular choice of learning approach among students. Although students had a positive perception of ODL, the student's attitude and intention to use ODL for future learning were lacking.
Keywords: Open Distance Learning, ODL, Technology Acceptance Model, TAM

Introduction
When the unprecedented Covid-19 pandemic hit the world in 2020, it threw the education system into disarray. Education in Malaysia came to an abrupt standstill; schools, colleges, and universities were forced to make swift changes to adopt the somewhat choppy and unchartered waters of fully digitalised Open and Distance Learning (ODL). Even though colleges in Malaysia had already used online learning for students before the Covid-19 outbreak, totally digital ODL without any physical classes caught students and lecturers by

surprise. On paper, not having physical lessons and activities on campus appears to be the best option, as the risk of catching and spreading Covid-19 is minimised by avoiding crowded settings and students learning from the comfort of their own homes (Lim, 2020). However, the teaching and learning fraternity faced many challenges in familiarizing themselves with the digital platform. Students had to figure out how to learn, use different platforms to take tests, and submit assignments. It is undeniable that pupils struggled to accept abrupt changes in learning, like shifting to a wholly digital environment. Most students who could not cope with this new learning norm chose to drop out or postpone their studies; low-income parents' inability to supply technological gadgets beyond their capacities added to the heartbreak (Abdul Aziz, 2020). Students needed training on how best to use the tools and prepare themselves to learn in an online environment.

Besides, students' ease of using mobile gadgets like smartphones and laptops for social interaction can be very different when the same gadgets are used for academic purposes. Although students are digital natives, thus showing keen interest and passion utilising smartphones and other digital gadgets for social matters, little is known how well they utilise the same technological gadgets for education (Quong et al., 2018). The perceived ease and usefulness of ODL in teaching and learning is important, and they denote the success and acceptability of ODL among students. Hence, it is critical to understand the factors influencing students' intentions and ability to learn English using the ODL at the tertiary level. This research aims to see if there is a relationship between learning English via ODL and the efficient usage of the ODL. The main goal of this study is to report on how students perceive ODL as a learning approach by means of looking at the perceived usefulness and ease of use of ODL from the student perspective. The results of this study will shed light on the students' preparedness to embrace ODL as a learning method.

Literature Review
Technology Acceptance Model (TAM)
Much research has been carried out to develop theories that shed light on the acceptance of technologies among users. One of these theories is Fred Davis' Technology Acceptance Model (TAM), founded in 1989. TAM is as described in Figure 1. TAM's fundamental function is to offer an insight into the external factors that influence the user's beliefs, attitudes, and objectives in accepting any form of technology (Davis, 1989).

TAM explains individuals' use of technology as a function of how easy it is to use the technology (perceived ease of use) and how useful it is to use a particular technology (perceived usefulness) (Davis, 1989; Venkatesh & Davis, 2007). Davis (1989), defined ease-of-use as "the degree to which a person believes that using a particular system would be free from effort." If the technology used for ODL is easy to use, the acceptance rate among students will be higher, and students will have a positive attitude towards it. Perceived usefulness is seen as "the degree to which a person believes that using a particular system would enhance his or her job performance". It means whether someone perceives that technology to be useful for what they want to do. Individuals' perceptions lead to attitudes
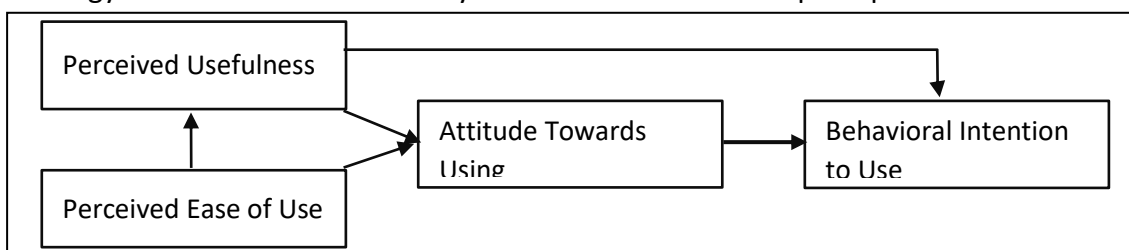
about technology, which affect behavioural intentions to use technologies (Venkatesh & Davis 2007).

Figure 1: Technology Acceptance Model (TAM) by Fred Davis

TAM has been used in many studies examining user acceptance of information technology, for instance, word processors (Davis 1989), Google Classroom (Waluyo, 2020), flipped classroom (Rahman Sidek & Yunus, 2012)), e-learning ((Ratna & Mehra, 2015), Blackboard (Landry, Griffith, & Hartman, 2006)), use of a spreadsheet (Mathieson, 1991), e-mail at workplace (Szajna, 1996), and web browser (Morris & Dillon, 1997).

In this study, ODL was considered a learning approach that uses Internet and web technologies to accomplish the task of teaching and learning through a computer interface. TAM is an intention-based model created explicitly to explain and predict users' acceptance of digital technology (Ranellucci et al., 2020). The TAM application can gauge the perceived usefulness, ease of use, attitudes towards use, and behavioural intention to use ODL for learning English. For this study, Google-based online tools, namely Google Classroom, Google Meet, and WhatsApp groups, were used for ODL among university students in a local university.

TAM in Teaching and Learning
While there have been studies on teaching and learning online, these studies have mainly concentrated on materials and innovative ways to conduct the lessons. Many studies have also highlighted the advantages of incorporating technology in language classes, such as that done by Samat et al (2020), which cites less cost and ability for learners to choose materials that meet their demands standards the advantages. In his study, Abbas (2018), states that while there have been many extended or revised versions of TAM since its first development in 1989, its primary purpose is to entail preliminary technology uses. He also cites some researchers and the bulk of literature to justify its usage in various technologies and predict intentions and actual usages for newly improved technologies such as the Internet, e-commerce, and e-government (Al-Gahtani, 2011; Abbas, 2018).

Other studies using the TAM model primarily include the effectiveness of implementation, student satisfaction, acceptance, success, and failure factors (Ibrahim et al., 2018). Studies investigating staff satisfaction and efficacy in adapting to technology in online language learning have also been investigated in studies conducted by Rizun and Strzelecki (2020). They looked at students' acceptance towards distance learning in Poland using TAM's two core structures, perceived ease of use and perceived usefulness. The two structures in the study were used to predict students' attitudes towards using and intention to use (the technology) when engaging in distance learning.

Studies such as those conducted by Rizun and Strzelecki (2020); Ibrahim et al (2018), have also highlighted the need to study acceptance towards technology in different institutions as each institution has its unique way of handling online teaching and learning. These differences include content presentation, different student backgrounds, instructors' teaching styles, learning cultures, and e-learning support provided by the institutions.

Language Learning and Technology
The use of technology in any lesson, particularly language lessons, is becoming increasingly popular in the wake of technological advances in today's world. The technological advances, coupled with events beyond our control, such as the Covid-19 pandemic, have shifted from

traditional learning to technology-enhanced teaching and learning, including a more significant portion, if not all, of the teaching and learning process to be conducted online.

When teaching language online, there are many considerations to be made. As opposed to the traditional method, one focus of the teaching and learning of language online is shifting from a teacher-centred domain to one shared almost equally between both teacher and students. Then, there is also the consideration of the tools and materials used. In traditional classrooms, teachers and students use the whiteboard and a textbook. In the teaching and learning of language using ODL, the main instrument or tool is the computer. Several researchers (Shanthi, Thayalan & Xavierine, 2018), (Samat et al., 2020), (Rahman, Yunus & Hashim, 2019) view computers as having a significant effect on the teaching and learning process. The researchers claim that student-centeredness is the main advantage of using computers and 'that more individualized learning would occur than ever before' (Rahman, Yunus & Hashim, 2019).

The language curriculum at UiTM is a hybrid of structural and task-based instruction. Task-based teaching and learning saw a shift from 'compartmentalized' language learning and the traditional 'Present-Practice-Produce' method to the language being taught and learned within a given context: the language used in daily lives, with 'authentic texts' widely used. While this is largely popular and attainable when face-to-face classes, creating a real-life setting is difficult through ODL. This is because the act of studying in front of a computer is already 'unnatural'. Two-way tasks, as in two individuals engaged in an information-gap task or sharing personal experiences, may be tricky for ODL (Oxford, 2006), especially if it requires multiple participants, such as a forum.

ODL is not entirely without advantages. Mofareh (2019) points out that there are many advantages to learning lessons using technology. Amongst the advantages are that it allows students to demonstrate independence, differentiates the needs of students, deepens learning by using resources that students are interested in, and enables students to build strong content knowledge wherever they find it. Nevertheless, what is most important is the assessment of acceptance by students in learning with technology.

Methodology
Source of data
This study uses primary data from an online survey to obtain data conducive to describe the response on the intention and the effective use of ODL among the samples. In this study, primary data was obtained using a combination of the Likert scale and dichotomous questions.

Sampling Technique and Data Collection Method
One thousand one hundred and seventy-five (1175) returned survey forms. The survey was distributed online to undergraduate students taking English courses offered by a local university in Malaysia. The students had gone through 10 weeks of the ODL instruction to learn English using the Google-based online tools, namely Google Classroom, Google Meet, and WhatsApp groups. All teaching and learning activities and assessments were carried out in a fully digitalised space. An analytical cross-sectional study was conducted between March 2020 until July 2020.

This study applied non-probability sampling, known as the convenience sampling technique, due to the advantages of being less expensive and less time-consuming (Sekaran & Bougie, 2009). In this sampling technique, the units that became a sample are collected without a

specific probability structure. The selection applied is not entirely randomized; hence the resultant sample may provide summaries and conclusions on the sample involved only.

Method of Analysis
The response to the intention and effective use of ODL among students and the relationship between the intention and effective use of ODL among students were described in this exploratory study. Data obtained were quantitatively analysed using Excel and SPSS software. Statistical analyses used in this study were descriptive statistics and correlation analysis. The measurement scale including the five Likert scales on a continuum from strongly disagree (1) to strongly agree (5) to measure positive or negative response with a particular statement and dichotomous questions. The procedures of conducting those analyses are as in Table 1.

Table 1
Methodology used in the study

No.	Research objectives	Method of analysis
1.	To describe the response on the intention and the effective use of an ODL among the students.	Descriptive Statistics
2.	To identify the relationship between intention and the effective use of an ODL among the students (Perceived Ease of Use, Perceived Usefulness, Attitude towards using ODL).	Correlation analysis Parametric test: Pearson product moment correlation Non – parametric test: Spearman rank correlation coefficient

Correlation Analysis
Correlation analysis is a statistical method used to measure the strength of the association between two variables. The parametric test used to examine the strength of association between two variables is a Pearson correlation (r). A Pearson correlation is used when assessing the relationship between two continuous variables. The non-parametric equivalent to the Pearson correlation is the Spearman correlation (ρ). Furthermore, parametric tests assume that the data resembles a particular distribution known as a normal distribution. In contrast, non-parametric tests are referred to as distribution-free tests regarding the data distribution.

Mainly, correlation analysis determines the relationship between intention and the effective use of an ODL among the students (Perceived Ease of Use, Perceived Usefulness, Attitude towards using ODL). The coefficient range measures the strength of the relationship of each variable as in Table 2. The range is between –1 and +1.

Table 2
Strength of the relationship

Coefficient Range	Strength of relationship
0.00	No relationship
0.01 – 0.49	Week relationship
0.50 – 0.69	Moderate relationship
0.70 – 0.99	Strong relationship
1.00	Perfect relationship

Results, Observation and Discussion
Descriptive Analysis
Perceived Ease of Use
As seen in Table 3, almost half of the sample opt to choose 'neutral' when asked about the experience on the ease of use of the tools used for the teaching and learning English via ODL; to learn English (49.0%), to sit for tests (43.6%), and for submitting assignments online (47.9%). Therefore, most students could not make a clear distinction or judge whether the tools used for learning English via ODL were easy or difficult to use.

Table 3
Perceived Ease of Use of ODL Tools for earning

Items	1	2	3	4	5
The platforms used for English teaching and learning in ODL were easy to use.	74	215	576	245	65
	6.30%	18.3%	49.0%	20.9%	5.50%
The platforms used for taking English tests in ODL were easy to use.	43	129	512	351	140
	3.70%	11.0%	43.6%	29.9%	11.9%
The platforms used for submitting English assignments via ODL were easy to use.	36	149	563	345	82
	3.10%	12.7%	47.9%	29.4%	7.00%

*1-strongly disagree to 5-strongly agree

Perceived Usefulness
Table 4 shows how the sample perceived the usefulness of ODL for learning English. Most of the students, 40.9 percent, who chose to be neutral agreed that using ODL could enhance their effectiveness in learning English. Besides that, 53.8 percent of the students neutrally agreed that ODL had improved their course performance, and 49.7 percent of the students slightly agreed that learning English via ODL inspired them to learn. Next, 45.9 percent of the students reported that ODL is a helpful platform to learn English. Moreover, a closer look at students' response pattern to the first question in Table 4 indicates that more students are inclined to disagree that learning English via ODL is effective. In fact, for this question, the result was more skewed towards agreeing than disagreeing. Hence, it can be said that most of the students perceived that ODL as a tool to learn English was neither beneficial nor disadvantageous; they chose to stay neutral

Table 4
Perceived Usefulness of ODL to learning

Items	1	2	3	4	5
Using ODL enhanced my effectiveness in learning.	180	285	480	155	75
	15.3%	24.3%	40.9%	13.2%	6.40%
Using ODL improved my English course performance.	71	191	632	221	60
	6.00%	16.3%	53.8%	18.8%	5.10%
Learning English via ODL is inspiring me	116	179	584	253	43
	9.90%	15.2%	49.7%	21.5%	3.70%
I found ODL a helpful tool to learn English.	99	155	539	324	58
	8.40%	13.2%	45.9%	27.6%	4.9%

*1-strongly disagree to 5-strongly agree

Attitude towards Using ODL
Table 5 shows the outcome of students' attitudes towards using ODL to learn English. Most students (46.0%) neutrally agreed that they are happy to learn English via ODL. Meanwhile, 44 percent of the students neutrally agreed that they are mentally prepared to learn English via ODL. 41.6 percent of students stated they like the experience of learning English via ODL. To another question, 577 students (49.1%) neutrally agreed that they have a favourable attitude towards learning English via ODL. On top of that, most students neutrally said that using ODL to learn English is a good idea. Looking at Table 5, though students took a neutral preference to all the questions to gauge students' attitude towards learning English via ODL, the skewness of the data is more towards agree. Therefore, it can be assumed that students have a reasonably positive attitude towards using ODL as an English learning tool.

Table 5
Attitude Towards Using ODL

Items	1	2	3	4	5
I am happy to learn English via ODL.	53	177	540	334	71
	4.5%	15.1%	46.0%	28.4%	6.0%
I am mentally prepared to learn English via ODL.	184	272	517	167	35
	15.7%	23.1%	44.0%	14.2%	3.0%
I like the experience of learning English via ODL.	65	209	489	244	168
	5.5%	17.8%	41.6%	20.8%	14.3%
I have a favourable attitude toward learning English via ODL.	59	151	577	305	83
	5.00%	12.9%	49.1%	26.0%	7.10%
Learning English via ODL is a good idea.	69	151	607	298	50
	5.9%	12.9%	51.7%	25.4%	4.3%

*1-strongly disagree to 5-strongly agree

Intention to use ODL
Table 6 indicates that most of the respondents stated a neutral stand (41%) when asked if they would like to learn English using ODL in the future. It is interesting to note that for the same question, 41 percent cumulatively 'totally disagree (20%)' and 'disagree (21%)' respectively. This indicates that most students did not prefer to learn English in a fully ODL method. Further, 48.4 percent of students have neither a positive nor a negative response to

learn English using ODL presently. However, looking at the pattern of distribution for both questions asked on the intentions of students to use the ODL method to learn English, it seems to indicate that though students are comfortable with English lessons conducted using ODL (30.4% agree and totally agree), they do not want to learn English using ODL in the future (41% totally disagree and disagree).

Table 6
Intention to use ODL

Items	1	2	3	4	5
I will return to a fully digitalised ODL English class when conducted in the future.	238 20.0%	250 21.0%	483 41.0%	153 13.0%	51 5.0%
Presently I look forward to my ODL classes for English lessons.	90 7.70%	159 13.5%	569 48.4%	305 26.0%	52 4.40%

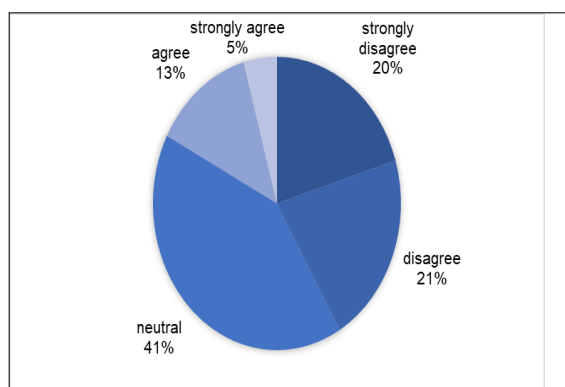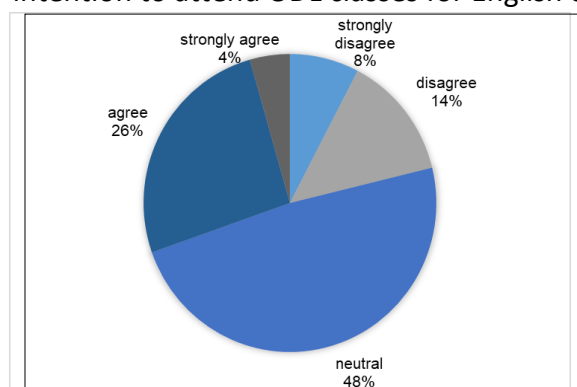*1-strongly disagree to 5-strongly agree

Figure 3: Students' intention to return to a fully digitalised ODL class in future.

Figure 4: Students' intention to attend ODL classes for English class presently.

To further clarify the findings in Table 6, students were asked their preference to learn English in the future. As seen in Table 7, 77.8 percent of students preferred blended learning where a digitalised class is combined with face-to-face classes, compared to 64.7 percent that preferred to entirely physical face. However, 7.7 percent of students indicated they prefer learning English in an ODL mode in future academic semesters (refer to Figure 5).

Table 7
Intention to use ODL for future learning

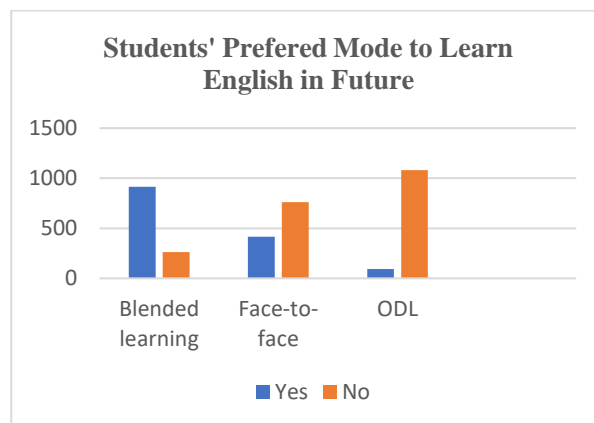| Items	Yes	No
I prefer digital learning (ODL) when combined with face-to-face classes (Blended learning).	914	261
	77.8%	22.2%
I prefer fully face-to-face classes (Physical).	415	760
	35.3%	64.7%
I prefer fully open distance learning (ODL).	94	1081
	7.7%	92.3%

Figure 5: Students' preferred mode to learn English in future.

Correlation Analysis

The Shapiro-Wilk normality test was conducted to examine whether the study variables were normally distributed in the study population [23]. As seen in Table 8, the p-value for all the variables in the study is less than 0.05, indicating that the variables were not normally distributed as required for parametric tests using Pearson's Product Moment Correlation. Therefore, the non-parametric test of Spearman's rank-order correlation is used to see the relationship between variables.

Table 8
Test of Normality

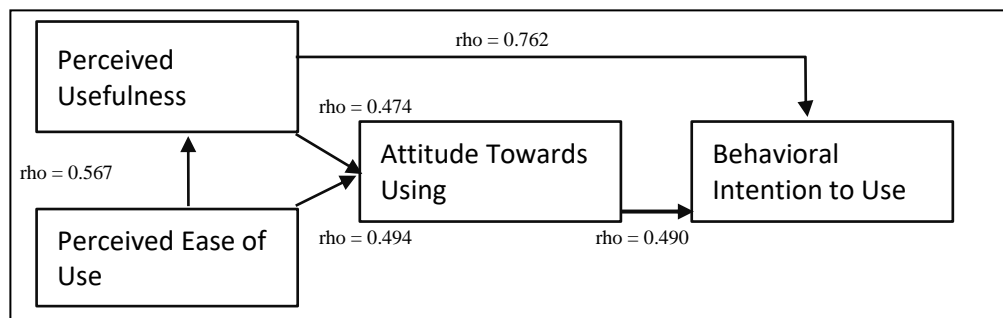| Variable	Shapiro-Wilk		
	Statistic	df	p-value
Ease of Use	0.973	1175	0.000
Usefulness	0.971	1175	0.000
Attitude	0.974	1175	0.000
Intention	0.952	1175	0.000

Figure 6. Correlation analysis

Figure 6 represents the correlation analysis using Spearman's rank-order correlation. Overall, there is a moderate positive relationship between the variables. Particularly, there is a moderate positive relationship between perceived ease of use and perceived usefulness (rho = 0.567, p-value = 0.000 < 0.05). Furthermore, there is a positive relationship between perceived usefulness towards attitude for using ODL (rho = 0.474, p-value = 0.000 < 0.05) and behavioural intention to use ODL (rho = 0.762, p-value = 0.000 < 0.05) respectively. However, there is only a weak positive relationship between perceived ease of use and attitude towards using ODL for learning English (rho=0.494, p-value=0.000 < 0.05). Next, there is a weak positive relationship between attitude towards using ODL and behavioural intention to use ODL (rho = 0.490, p-value = 0.000 < 0.05). Thus, it can be concluded that students have moderate positive attitudes towards using ODL as a learning tool for English.

Conclusion

This study investigated the applicability of TAM in explaining students' acceptance of the ODL within the academic setting. Findings show that students mostly used laptops and handphones to learn via ODL. The goal of this study was to determine students' acceptance of ODL as a learning method. The second goal of this research was to figure out what factors were important in understanding the intention to engage in ODL. Finally, this research investigated whether attitudes like perceived ease of use and perceived usefulness impact ODL acceptance as a learning approach.

The findings of the study have a number of outcomes. To begin, administrators who oversee managing teaching and learning in their institutions, and other stakeholders, should thoroughly investigate the possibility of adopting a fully digitalized ODL because undergraduate students studying full-time were not in favour of it. To ensure the success of ODL method, the teaching style and tools used should not hamper the flow or the content delivery in the digital classroom. Stress caused by poor Internet connectivity and inappropriate learning gadgets can also affect the students' psychological well-being.

Though there was a positive relationship between reported ease of use and perceived usefulness of ODL as a learning method in the study, only a minor positive link was matched against students' attitude and behaviour (intention to use). This means that ODL was not a popular choice of learning method among students - though ODL had a positive perception of the technology's usefulness, the student's attitude and intention to use ODL for future learning were lacking. Therefore, rather than focusing solely on the conventions on how ODL is implemented in institutions of higher learning, administrators of education should concentrate on how ODL may help increase the efficiency and efficacy of students' learning experience.

In conclusion, the findings help relevant stakeholders enhance their existing learning systems by combining teaching styles and appropriate platforms with teaching students. The findings can be referenced as guidelines to increase the use of ODL by adopting new technology that is more appealing to students. In addition, they can widen the applicability of TAM in the education field, especially in the context of ODL. Other variables could be studied in this study. Therefore, further exploration of other possible constructs like computer self-efficacy is in tools used for learning in ODL is suggested.

References

Abbas, A. H. (2018). Risk as Determinant of Actual Usage in TAMmodel: Application of E-Government in the State of Kuwait. *International Conference on Management, Leadership and Business Intelligence*.

Abdul Aziz, A. (2020). Let's Buck Up! Don't Let COVID-19 Disrupt Our Education. *Bernama News*. https://www.bernama.com/en/thoughts/news.php?id=1881728

Al-Gahtani, S. S. (2011). Modeling the electronic transactions acceptance using an extended technology acceptance model. *Applied Computing and Informatics*, *9*(1), 47–77. https://doi.org/10.1016/j.aci.2009.04.001

Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–339.

Landry, B., Griffith, R., & Hartman, S. (2006). Measuring student perceptions of Blackboard using the technology acceptance model. *Decision Science*, *4*(1), 87–99.

Lim, I. (2020). Reality for Malaysia's university students: Online learning challenges, stress, workload; possible solutions for fully digital future until Dec. *The News Staraits Times*.

Mathieson, K. (1991). Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior. *(Information Systems Research*, *2*(2), 173–191.

Mofareh, A. (2019). The Use of Technology in English Language Teaching. *Frontiers in Education Technology*, *2*(3), p168. https://doi.org/10.22158/fet.v2n3p168

Oxford, R. (2006). Task-Based Language Teaching and Learning: An Overview. *Asian EFL Journal*, *8*.

Quong, J., Snider, S., & Early, J. (2018). Reducing Transactional Distance in Online and Blended Courses Through the Use of a Closed Social Media Platform. *Journal of Educational Technology Systems*, *47*, 004723951876665. https://doi.org/10.1177/0047239518766654

Rahman, S., Yunus, M., & Hashim, H. (2019). A Technology Acceptance Model (TAM): Malaysian ESL Lecturers' Attitude in Adapting Flipped Learning. *Malaysian Journal of Education*, *44*, 43–54.

Sidek, R. E. A., & Yunus, M. (2012). Students' Experiences on using Blog as Learning Journals. *Procedia - Social and Behavioral Sciences*, *67*(November 2011), 135–143. https://doi.org/10.1016/j.sbspro.2012.11.314

Ranellucci, J., Rosenberg, J., & Poitras, E. (2020). Exploring pre-service teachers' use of technology: The technology acceptance model and expectancy–value theory. *Journal of Computer Assisted Learning*, *36*. https://doi.org/10.1111/jcal.12459

Ratna, P. A., & Mehra, S. (2015). Exploring the acceptance for e-learning using technology acceptance model among university students in India. *International Journal of Process Management and Benchmarking*, *5*(2), 194–210. https://doi.org/10.1504/IJPMB.2015.068667

Rizun, M., & Strzelecki, A. (2020). Students' Acceptance of the COVID-19 Impact on Shifting Higher Education to Distance Learning in Poland. *International Journal of Environmental Research and Public Health*, *17*, 6468. https://doi.org/10.3390/ijerph17186468

Sekaran, U., & Bougie, R. (2009). Research Methods for Business: A Skill Building Approach (5th Edition). *International Journal of Information Technology and Management - IJITM*.

Szajna, B. (1996). Empirical Evaluation of the Revised Technology Acceptance Model. *Management Science*, *42*, 85–92.

https://doi.org/http://dx.doi.org/10.1287/mnsc.42.1.85

Venkatesh, V., & Davis, F. (2007). A Model of the Antecedents of Perceived Ease of Use: Development and Test*. *Decision Sciences*, *27*, 451–481.

https://doi.org/10.1111/j.1540-5915.1996.tb00860.x

Waluyo, B. (2020). Learning Outcomes of a General English Course Implementing Multiple E-learning Technologies and Active Learning Concepts. *The Journal of AsiaTEFL*, *17*(1), 160–181.