

A Survey on the Acceptance of E-Learning for Professional Development amongst English as a Second Language (ESL) Teachers in Malaysia

Nurhani Omar, Harwati Hashim

Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia

Email: nurhani.omar@gmail.com

How to cite this paper: Omar, N., & Hashim, H. (2021). A Survey on the Acceptance of E-Learning for Professional Development amongst English as a Second Language (ESL) Teachers in Malaysia. *Creative Education*, 12, 1027-1039. <https://doi.org/10.4236/ce.2021.125075>

Received: March 11, 2021

Accepted: May 21, 2021

Published: May 24, 2021

Copyright © 2021 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Recent trends and advances in Education 4.0 have expedited Malaysian ESL teachers harnessing e-learning to facilitate their professional development. This paper investigates the level of Malaysian English as a Second language (ESL) teachers' acceptance of e-learning for PD using the Technology Acceptance Model (TAM). Additionally, the paper examines the plausible relationships amongst perceived ease of use, perceived usefulness, behavioural intention to use and actual use of e-learning for professional development. A total of 60 Malaysian ESL teachers who participated in an online professional development course were requested to complete a questionnaire after the course ended. Data collected were analysed via descriptive and inferential statistics. The teachers' responses indicated their levels of technological acceptance. Additionally, significant relationships between the perceived usefulness, behavioural intention toward using e-learning, and actual use of e-learning were noted. However, no significant relationship was observed between the perceived ease of use with behavioural intention to use. This paper hopes to provide input on how training providers could improve e-learning within the context of professional development. The limitations, implications, and recommendations are also provided for future studies.

Keywords

Teacher Professional Development, Perceived Ease of Use, Perceived Usefulness, Behavioural Intention to Use, Actual Use

1. Introduction

The advent of Education 4.0 is reflected in the formulation of new criteria for preferred knowledge and skills deemed needed by educators associated with dif-

ferent modes of training and behavioural trends. This has led to the need to invent new forms of teaching and learning, as well as to redesign and rethink education in the digital era due to the rapid development of emerging technologies (Hashim, 2018). Recent innovations and advancements have provided an opportunity to develop a unique, independent and technology-facilitated learning environment delivered via e-learning platforms.

Where educators and teachers are concerned, the need to upskill is never exhaustive. In many countries, policies dictate that teachers need to meet certain expected standards for performance that signify their quality (Great Schools Partnership, 2013). Hence, teachers are themselves learners who constantly seek to better themselves for their students' betterment, and professional development is a primary mechanism to that end. Several constraints exacerbate access to conventional professional development methods, i.e., time, cost, and distance (Thorne, 2020; Blanchard, LePrevost, Tolin, & Gutierrez, 2016; Easton, 2013). It is timely that e-learning can help teachers to study at their pace and environment (Rusli & Hashim, 2018).

Although e-learning is probably not new to Malaysian teachers, most of the previous studies were focused and explored teachers' efficacy to integrate technology in their pedagogy (Che Had & Rashid, 2019), leading to professional development courses tailored to meet that objective (Thorne, 2020). Couched within the context of English as a Second language (ESL) teachers in Malaysia, the Malaysia Education Blueprint that emphasised teachers meeting a certain standard of language proficiency has also expedited the need for rapid upskilling (Ministry of Education, 2013). Hence, the need for comprehensive professional development extends beyond traditional face-to-face courses into technology-oriented contexts.

Additionally, most e-learning studies are more descriptive and case-specific, emphasising the technology used or the system itself rather than the plausible theoretical contributions and implications (Booth & Kellogg, 2015). It is also evident that professional development courses conducted online will continue to expand (Powell & Bodur, 2019). Investigating the factors that impact acceptance, beliefs and efficacies about e-learning and the number of learners willing to be involved in the systems could help increase (Parkes, Stein, & Reading, 2015) the significance of enhancing knowledge management using technology (Scott & Scott, 2010). Consequently, the purpose of this study is to investigate Malaysian ESL teachers' acceptance of e-learning for professional development by utilising the Technology Acceptance Model (TAM) based on selected constructs such as perceived usefulness, perceived ease of use, behavioural intention to use, and actual use of the system. Therefore, the following research questions are developed:

- 1) What are the ESL teachers' acceptance levels toward e-learning for professional development regarding perceived ease of use, perceived usefulness, behavioural intention to use, and actual use of the system?
- 2) Is there a significant relationship between perceived ease of use and beha-

vioural intention to use e-learning for professional development amongst Malaysian ESL teachers?

3) Is there a significant relationship between perceived usefulness and behavioural intention to use e-learning for professional development amongst Malaysian ESL teachers?

4) Is there a significant relationship between behavioural intention to use and actual use of e-learning for professional development amongst Malaysian ESL teachers?

The rest of the article is structured as follows: first, the extant literature on teachers' professional development, the Technology Acceptance Model, and teachers' acceptance of e-learning are reviewed. This is followed by a description of the research methodology used in the study and a discussion of the findings. Finally, the implications, limitations, and recommendations for future research are offered.

2. Literature Review

Various platforms are available through which learners can make the most of their learning experience. The challenge is to establish whether changes in instructional methods would be positively accepted (Halverson & Graham, 2019) besides encouraging powerful and effective learning by considering adequate measures for correct decision-making, relevance, social contact, and setting (Embi & Panah, 2014). In terms of tools and delivery, educational fraternities need to rethink the whole concept of an educational course from the conventional, closed community, and highly structured course, where learners are reliant on instructors, to open platforms of independent learners (Downes, 2006; Siemens, 2013).

2.1. Teachers' Professional Development (TPD)

It is pertinent to note the relevance of sustained professional development for teachers which explained the designation of any effective professional development for upskilling teachers to promote their students' academic language proficiency (Kalinowski, Gronostaj, & Vock, 2019). In conventional teacher professional development (TPD) training, teachers often faced conflicts with their work schedules, resulting in the loss of valuable contact hours with their students. Further disparities in the quantity and quality of said TPD often led to multi-faceted challenges to participation (Powell & Bodur, 2019).

Given the prevalence of technology in modern life, there has been a trend to develop online professional training courses focused on augmenting teachers' experiential learning (Kalinowski, Gronostaj, & Vock, 2019). The question remained on whether the courses qualify as teachers' acceptance of the mode of delivery. The study by Halverson and Graham (2019) asserted that only 3.5% of the top-cited papers on online learning investigated working adult's experience. The lack of empirical studies into e-learning, specifically for in-service courses,

needs to be addressed since such learners have specific needs (Tay, 2016; Elliott, 2017). Therefore, this study attempted to shed some light on this pertinent issue to better inform training providers in ensuring effective delivery of e-learning for TPD.

In another study, Abdullah and Hashim (2020) proposed the affordances of a professional learning community (PLC) as a learning platform for teachers to pursue professional development by sharing knowledge and best practices both online and offline. In the context of Malaysian ESL teachers who participated in this study, the Learning Management Systems (LMS) chosen was Schoology that allowed interaction, albeit with limitations, amongst participants within their community. Meanwhile, Preece and Hamed (2020) emphasised that educators must explicitly develop to avail learners of diverse learning environments and identify, prepare, and handle ongoing learning opportunities within their professional practice. Hence, it seems reasonable that teachers embrace the role of e-learners to become better informed of the affordances that may influence the acceptance of using e-learning if and when they utilise a similar method in the course of their teaching.

2.2. Teachers' Acceptance of E-Learning

In previous studies, e-learning can be defined as a learning approach facilitated and supported through the use of information and communications technology (ICT) concerning the contexts where such learning materialises (Asabere & Enguah, 2012). Terms such as online learning, open learning, web-based learning, computer-mediated learning, blended learning, m-learning, and e-learning refer to the common ability to use a computer connected to a network that offers the possibility to learn independent of place, time or means (Cojocariu, Lazar, Nedeff, & Lazar, 2014).

Meanwhile, Singh and Thurman (2019) defined it as learning experiences using different devices with internet access, classified into synchronous and asynchronous categories. The former refers to learners and instructors physically separated but work simultaneously, while the latter is when learners and instructors are separated both physically and time wise (Al-Azawei & Lundqvist, 2015). In their research, Solimeno, Mebane, Tomai, and Francescato (2008) posited that e-learning is suitable for learners with time-management or job-commitment issues, regardless.

E-learning for TPD refers to courses, workshops, or learning modules delivered in an online format, which may be asynchronous, synchronous, or blended (Powell & Bodur, 2019). In this study, the e-learning for TPD fell into the asynchronous category whereby teachers voluntarily joined a professional development course focusing on improving their proficiency via the LMS Schoology (Schoology). Hence, it was vital to gauge the participants' acceptance since previous studies reported that learners were not prepared to balance the demands of their personal lives with their online learning environment (Dhawan, 2020).

Apart from deliberating more on the effects of online TPD on teachers' practice and students' outcome, recent studies had also identified online TPD designs that may influence teachers' experience of e-learning, such as 1) teachers' individual professional learning needs; 2) usefulness; 3) interaction and collaboration; 4) authentic tasks and activities; and 5) reflection (Farris, 2015; Booth & Kellogg, 2015; Scott & Scott, 2010; Huang, 2002). Nonetheless, since this study utilised TAM, the focus would be on the teachers' perception of the usefulness of e-learning for TPD.

To ensure the acceptance of e-learning, past studies stressed on learners' 1) self-efficacy toward the use of technology; 2) self-reflection on the effectiveness of in-service courses; and 3) awareness of perpetual upskilling (Thorne, 2020; Blanchard, LePrevost, Tolin, & Gutierrez, 2016). However, previous studies also reported a varying degree of success despite the existence of either all or any one of those elements (Mohalik & Sahoo, 2020; Ngampornchai & Adams, 2016; Easton, 2013). Parkes, Stein, and Reading (2015) revealed that many learners had low-level preparedness concerning the mastery of the LMS chosen as the platform for various asynchronous online learning modules and courses. This paper endeavoured to identify if the teachers' perception of their online experience had been influential in their acceptance of e-learning for TPD.

2.3. The Technology Acceptance Model (TAM)

TAM was originally developed by Davis (1986) to explain users' propensity in embracing computer usage and ICT. The main variables in TAM are perceived usefulness (PU) and perceived ease of use (PEOU) of technology which are valuable predictors of users' attitudes and behavioural intention toward using technology. TAM also hypothesised users' perception of technology, subsequent behavioural intentions, and actual usage (Davis, Bagozzi, & Warshaw, 1989). Additionally, PEOU was also considered to influence the perceived usefulness of technology. Figure 1 presents the original version of TAM.

In TAM, perceived utility refers to the degree of users' perception that technology can enhance their job efficiency, whereas perceived ease of use suggests how effortless they perceive using the technology (Masrom, 2007). The study by Teo and Noyes (2014) argued that attitude toward using has an effect on intention to use, but the effectiveness of this effect often varies. In contrast, Masrom (2007) discovered that attitude toward using has no direct and significant effect

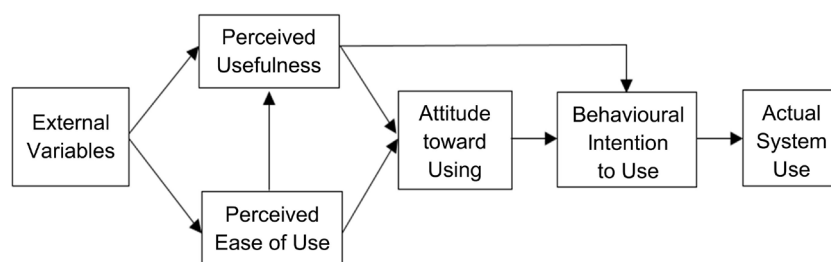


Figure 1. Technology acceptance model (Davis, Bagozzi, & Warshaw, 1989).

on intention to use. The conflicting contentions may have occurred as a result of an incredibly broad definition as well as liberal interpretation of the term “attitude.”, implying that it can refer to a variety of aspects of using a system (Amarin & Habashneh, 2019).

The final version of TAM was developed by Venkatesh and Davis (1996) after discovering that perceived usefulness and perceived ease of use have a direct influence on behaviour intention, obviating the need for the attitude construct. Hence, this study opted to exclude attitude toward using as a construct and a reduced TAM model was adapted as depicted in Figure 2. Similarly, external variables were excluded from the research model considering that there was no immediate goal to investigate the predictors of perceived usefulness and perceived ease of use.

The study by Smith and Sivo (2012) concluded that the effectiveness of online technology for professional development depends on teachers’ acceptance of online learning as an alternative to conventional face-to-face delivery. It is worth noting that the validity of the instrument has been verified with different populations of users and choices of software (Cheok & Wong, 2015; Wasserman & Migdal, 2019). Hence, using TAM in this study may inform the research questions developed for this paper.

3. Methodology

The present study utilised a quantitative survey, which included both descriptive and inferential statistics. This study used purposive sampling consisting of 60 ESL teachers teaching in government schools in Malaysia (N = 60), who were participants in a teacher professional development (TPD) course conducted asynchronously via Schoology as they would be the best to inform the research questions.

The instrument used was a questionnaire via Google Form to address the issue of accessible population. It comprised the subscales: 1) level of perceived ease of use of e-learning, 2) level of perceived usefulness of e-learning, 3) behavioural intention to use, and 4) actual use. These items were adapted from scales measuring variables by Ngampornchai and Adams (2016). The items were 5-point Likert-type, ranging from “Strongly Disagree” (1) to “Strongly Agree” (5). The

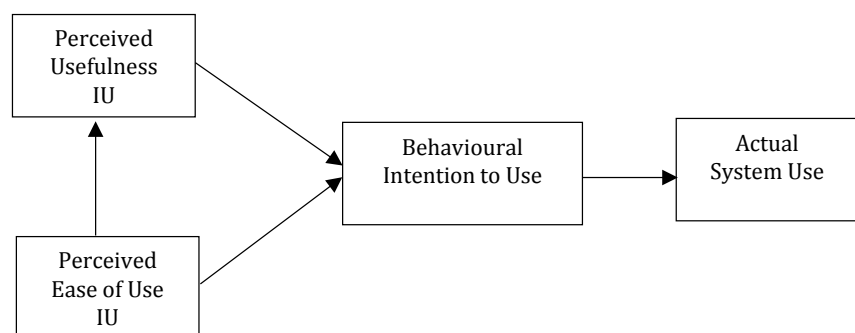


Figure 2. The Research Model (Adapted from Venkatesh and Davis, 1996).

instrument also included the teachers' demographic information, which incorporated their gender, age, prior e-learning experience(s), access to, and frequency of browsing the Internet. The reliability of the instrument was assessed by computing Cronbach alpha coefficients for each subscale.

The result of Cronbach alpha coefficients should show a reliable coefficient above 0.70 (Nunnally, 1978). **Table 1** shows the results of each subscale, which are above 0.70, indicating a reliable questionnaire.

The survey was conducted via Google Form since the participants resided in various locations across the nation. The questionnaire contained no personally identifiable information such as names and contact numbers to ensure confidentiality. The respondents were informed of their voluntary participation; hence, they may withdraw from the survey at any time if they so wished.

Data collected were calculated by adopting both descriptive and inferential statistics. Descriptive statistics were computed for each item on the subscales. Next, the Pearson product-moment correlation coefficient (r) was used to determine the correlation between the dependent and independent variables.

4. Findings

The survey was completed by 60 ESL teachers consisting of 71% female and 29% male respondents. The majority of the respondents were between 30 to 40 years of age, with more than 5 years of service. More than half of the respondents (58%) had prior experience(s) using e-learning. Quantitative analyses were conducted to determine the findings.

To address the first research question, i.e., the ESL teachers' acceptance levels toward e-learning for professional development in terms of perceived ease of use, perceived usefulness, behavioural intention to use and actual use, the study computed the descriptive statistics of the variables used to measure the subject matter, as shown in **Table 2**. The results suggested that teachers scored the highest for the construct actual use ($M = 4.73$, $SD = .76$). The implication for training providers is the teachers' awareness that e-learning for professional development may be the most viable option available for them. Contrastingly, perceived ease of use recorded the lowest score ($M = 3.69$, $SD = .59$). Perhaps, this indicated that teachers are ready to embrace e-learning for their TPD regardless of their efficacy toward technology-facilitated training platforms.

The results of a Pearson product-moment correlation coefficient computed to assess the relationships to inform research questions 2 to 4 are depicted in **Table 3**.

Table 1. Cronbach Alpha coefficients results.

Variables	N	Cronbach's Alpha
Perceived Ease of Use (PEOU)	5	0.827
Perceived Usefulness (PU)	5	0.832
Behavioural Intention (BI)	5	0.854
Actual Use (AU)	5	0.843

Table 2. Means and standard deviations of the constructs.

Construct	Mean	SD
Perceived Ease of Use (PEOU)	3.69	0.59
Perceived Usefulness (PU)	3.84	0.62
Behavioural Intention (BI)	3.97	0.79
Actual Use (AU)	4.73	0.76

Table 3. Pearson's product moment correlations amongst the constructs.

		Perceived Ease of Use	Perceived Usefulness	Behavioural Intention to Use	Actual Use
Perceived Ease of Use	Pearson Correlation	1	0.562**	0.397**	0.409**
	Sig. (2-tailed)		0.001	0.028	0.001
	N	60			
Perceived Usefulness	Pearson Correlation	0.562**	1	0.601**	0.683**
	Sig. (2-tailed)	0.001		0.001	0.000
	N		60		
Behavioural Intention to Use	Pearson Correlation	0.397**	0.601**	1	0.862**
	Sig. (2-tailed)	0.028	0.001		0.000
	N			60	
Actual Use	Pearson Correlation	0.409**	0.683**	0.862**	1
	Sig. (2-tailed)	0.001	0.000	0.000	
	N				60

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

First, the relationship between the perceived ease of use ($M = 3.69$, $SD = 0.59$) and behavioural intention to use e-learning for professional development amongst Malaysian ESL teachers ($M = 3.97$, $SD = 0.79$) indicates a weak, positive correlation between them, i.e., $r(58) = 0.397$. Nonetheless, the relationship is not significant ($p > 0.001$). Therefore, the teachers' perceived ease of use did not appear to be associated with their behavioural intention to use e-learning for professional development.

Meanwhile, a significant relationship is noted between perceived usefulness ($M = 3.84$, $SD = 0.62$) and behavioural intention to use e-learning for professional development amongst Malaysian ESL teachers ($M = 3.97$, $SD = 0.79$). A moderate, positive correlations was found between the variables $r(58) = 0.56$, $p < 0.001$. Hence, the more the teachers perceived e-learning as being useful, the more likely they intend to use it for their TPD.

Next, the correlation coefficient (r) equals 0.862, indicates a strong relationship between behavioural intention to use ($M = 3.97$, $SD = 0.79$) and the actual use of e-learning for professional development amongst Malaysian ESL teachers ($M = 4.73$, $SD = 0.76$). Thus, it is possible to surmise that the variables are re-

lated. In particular, it seemed that the more teachers indicated an intention to use, the greater the chance of them using e-learning for TPD ($r = 0.86$, $p < 0.001$).

The results suggested that the ESL teachers in Malaysia were inclined to accept e-learning for professional development. The relationships amongst the four constructs varied in terms of significance and strength. Comparatively, the results favourably addressed the research questions with the exclusion of research question 2.

5. Discussion

The results of this study indicated the plausibility of TAM as a reliable model to gauge the levels of acceptance toward e-learning for professional development amongst Malaysian ESL teachers. The means computed through statistical analysis for acceptance levels revealed that the participants judged their acceptance as moderately high, with all construct mean scores recorded higher than 3.5. Perhaps ESL teachers in Malaysia have embraced the rapid advancement of instructional technologies, augmenting their experiential learning (Kalinowski, Gronostaj, & Vock, 2019). This bodes well with the notion of using e-learning in TPD that positively relates to addressing learners and their specific needs (Tay, 2016). The results help provide vital data to online course instructors to develop better modules and facilitate learning more effectively (Asabere & Enguah, 2012).

Additionally, the ESL teachers' acceptance of the perceived usefulness of e-learning was positively correlated with their behavioural intention to use and actual use, reminiscent of the contentions of previous studies (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989). For instance, one assumption is that the more the teachers perceived e-learning as being useful, the more likely they intend to use it for their TPD. Another example is that the more teachers indicated an intention to use, the greater the chance of them actually using e-learning for TPD. Thus, highlighting the quest to promote individual intention to use technology, a favourable perception of the usefulness of technology is critical (Parkes, Stein, & Reading, 2015).

From a pedagogical perspective, the results brought forth other implications. Despite recent development and novel milestones, tangible barriers exist in sustaining a positive attitude in an e-learning setting (Tay, 2016). However, the respondents' scores for perceived usefulness of e-learning for TPD were indicative of a more open perception of embracing current instructional technologies and educational trends. Crucial to the endeavour will be developing a suite of online training tools and selecting a suitable learning management system (LMS). The study by Preece and Hamed (2020) maintained that educators must build a dynamic learning atmosphere for learners and recognise, plan and manage ongoing learning opportunities within their professional practice.

The study was not without some limitations, bound within certain parameters. For instance, the finding that corroborated ESL teachers' perceived ease of

use of technology while wearing a learner's hat did not have a significant relationship proven by the correlation's coefficient. It was indicative of the concerns raised by previous research that many factors could influence acceptance and readiness (Thorne, 2020; Blanchard, LePrevost, Tolin, & Gutierrez, 2016; Farris, 2015; Booth & Kellogg, 2015; Scott & Scott, 2010; Huang, 2002). Previous studies also reported a varying degree of success despite the existence of either all or any one of those elements (Mohalik & Sahoo, 2020; Ngampornchai & Adams, 2016; Easton, 2013).

The study, furthermore, was limited to some respondents who were participants in an asynchronous online course. Although the ESL teachers who participated could still discuss and communicate with fellow course participants, the stark reality was they knew it was a matter of to each his own. The crux of the matter was whether this situation influenced their perceived ease of use and perceived usefulness superfluously, considering learners and instructors are separated both physically and time wise (Al-Azawei & Lundqvist, 2015).

6. Conclusion

Although proponents of e-learning may have painted an idyllic scene where course participants can learn at their own pace and place, the reality may not be as picture-perfect. Participating in e-learning courses is not a leisurely task, perhaps more so in working adults such as the respondents in this study. Therefore, e-learning courses should be structured to improve the overall learning experience, whereby instructors and designers should capitalise on the comparative strengths of online interactions and human experiences. Online learning courses should be refreshed periodically, and ESL teachers need to acknowledge the importance of e-learning for professional development to ensure successful implementation of it in future endeavour. Correspondingly, the complexities that arise in the e-learning engagement research should be addressed appropriately. Specific factors and incentives need to be identified to encourage more teachers to accept e-learning for professional development, in line with the Malaysia Education Blueprint. Providers of e-learning courses should focus on fostering positive views of e-learning, ease of use, and encouraging actual use amongst future TPD participants besides incorporating the advancement of Education 4.0. In conclusion, the advantages of e-learning outweigh its drawbacks and shall remain an indispensable pedagogical phenomenon for years to come.

Acknowledgements

The authors would like to thank Universiti Kebangsaan Malaysia under the Research Grant number 1) GG-2020-027 and 2) GG-2021-003 for supporting this project.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Abdullah, Y. L. P. K., & Hashim, H. (2020). Enhancing Professional Learning Community through the Collaborative Instructional Design System (CIDS): The Asia Model. *International Journal of Scientific & Technology Research*, *9*, 1055-1058.
<https://www.ijstr.org/final-print/apr2020/Enhancing-Professional-Learning-Community-Through-The-Collaborative-Instructional-Design-System-cids-The-Asia-Model.pdf>
- Al-Azawei, A., & Lundqvist, K. (2015). Learner Differences in Perceived Satisfaction of an Online Learning: An Extension to the Technology Acceptance Model in an Arabic Sample. *The Electronic Journal of e-Learning*, *13*, 408-426.
<https://academic-publishing.org/index.php/ejel/article/view/1942/1905>
- Amarin, N. Z., & Habashneh, K. K. (2019). The Impact of Weblogs on Contemporary Pedagogy: RSS Feeds as an Example. *Dirasat: Educational Sciences*, *46*, 761-769.
https://www.researchgate.net/publication/338403120_The_Impact_of_Weblogs_on_Contemporary_Pedagogy_Rss_Feeds_as_an_Example
<https://doi.org/10.35516/0102-046-002-032>
- Asabere, N., & Enguah, S. (2012). Integration of Expert Systems in Mobile Learning. *International Journal of Information and Communication Technology Research*, *2*, 55-61.
- Blanchard, M. R., LePrevost, C. E., Tolin, A. D., & Gutierrez, K. S. (2016). Investigating Technology-Enhanced Teacher Professional Development in Rural, High-Poverty Middle Schools. *Educational Researcher*, *45*, 207-220.
<https://doi.org/10.3102/0013189X16644602>
- Booth, S. E., & Kellogg, S. B. (2015). Value Creation in Online Communities for Educators. *British Journal of Educational Technology*, *46*, 684-698.
<https://doi.org/10.1111/bjet.12168>
- Che Had, M. Z., & Rashid, R. A. (2019). A Review of Digital Skills of Malaysian English Language Teachers. *International Journal of Emerging Technologies in Learning*, *14*, 139-145. <https://doi.org/10.3991/ijet.v14i02.8732>
- Cheok, M. L., & Wong, S. L. (2015). Predictors of E-Learning Satisfaction in Teaching and Learning for School Teachers: A Literature Review. *International Journal of Instruction*, *8*, 75-90. <https://doi.org/10.12973/iji.2015.816a>
- Cojocariu, V.-M., Lazar, I., Nedeff, V., & Lazar, G. (2014). SWOT Analysis of E-Learning Educational Services from the Perspective of Their Beneficiaries. *Procedia-Social and Behavioral Sciences*, *116*, 1999-2003. <https://doi.org/10.1016/j.sbspro.2014.01.510>
- Davis, F. D. (1986). *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Ph.D. Thesis, Cambridge, MA: Sloan School of Management, Massachusetts Institute of Technology.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*, 319-339. <https://doi.org/10.2307/249008>
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*, 982-1003. <https://doi.org/10.1287/mnsc.35.8.982>
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, *49*, 5-22.
<https://journals.sagepub.com/doi/pdf/10.1177/0047239520934018>
<https://doi.org/10.1177/0047239520934018>
- Downes, S. (2006). *Autonomy*. <http://halfanhour.blogspot.com/search>
- Easton, L. B. (2013). A Global Perspective: What Professional Learning Looks Like

- Around the World. *Journal of Staff Development*, 34, 10-20.
<https://doi.org/10.1088/2058-7058/20/10/32>
- Elliott, J. C. (2017). The Evolution from Traditional to Online Professional Development: A Review. *Journal of Digital Learning in Teacher Education*, 33, 114-125.
<https://doi.org/10.1080/21532974.2017.1305304>
- Embi, M. A., & Panah, E. (2014). Overview of Flipped Learning. In M. A. Embi (Ed.), *Blended & Flipped Learning: Case Studies in Malaysian HEIs* (pp. 197-208). Selangor, Malaysia: Centre for Teaching & Learning Technologies, UKM & Ministry of Education Malaysia. <https://fliphtml5.com/tnke/bye/basic>
- Farris, S. (2015). Think “e” for Engagement: Use Technology Tools to Design Personalized Professional E-Learning. *Journal of Staff Development*, 36, 54-58.
<https://eric.ed.gov/?id=EJ1082839>
- Great Schools Partnership (2013). *The Glossary of Education Reform*.
<https://www.edglossary.org/professional-development/>
- Halverson, L. R., & Graham, C. R. (2019). Learner Engagement in Blended Learning Environments: A Conceptual Framework. *Online Learning*, 23, 145-178.
<https://doi.org/10.24059/olj.v23i2.1481>
- Hashim, H. (2018). Application of Technology in the Digital Era Education. *International Journal of Research in Counseling and Education*, 2, 1-5.
<https://doi.org/10.24036/002za0002>
- Huang, H.-M. (2002). Toward Constructivism for Adult Learners in Online Learning Communities. *British Journal of Educational Technology*, 33, 27-37.
<https://doi.org/10.1111/1467-8535.00236>
- Kalinowski, E., Gronostaj, A., & Vock, M. (2019). Effective Professional Development for Teachers to Foster Students’ Academic Language Proficiency across the Curriculum: A Systematic Review. *AERA Open*, 5, 1-23. <https://doi.org/10.1177/2332858419828691>
- Masrom, M. (2007). Technology Acceptance Model and E-Learning. *Proceedings of the 12th International Conference on Education*, Universiti Brunei Darussalam, 21-24 May 2007, 1-10.
- Ministry of Education (2013). *Malaysia Education Blueprint*. Putrajaya: Ministry of Education.
- Mohalik, R., & Sahoo, S. (2020). E-Readiness and Perception of Student Teachers toward Online Learning in the Midst of COVID-19 Pandemic. *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.3666914>
- Ngampornchai, A., & Adams, J. (2016). Students’ Acceptance and Readiness for E-Learning in North Eastern Thailand. *International Journal of Educational Technology in Higher Education*, 13, Article No. 34. <https://doi.org/10.1186/s41239-016-0034-x>
- Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York: McGraw-Hill.
- Parkes, M., Stein, S., & Reading, C. (2015). Student Preparedness for University E-Learning Environments. *The Internet and Higher Education*, 25, 1-10.
<https://doi.org/10.1016/j.iheduc.2014.10.002>
- Powell, C. G., & Bodur, Y. (2019). Teachers’ Perceptions of an Online Professional Development Experience: Implications for a Design and Implementation Framework. *Teaching and Teacher Education*, 77, 19-30. <https://doi.org/10.1016/j.tate.2018.09.004>
- Preece, A. S., & Hamed, P. K. (2020). Andra-Heutagogy: A New Approach for Teacher Training. *International Journal of Education and Pedagogy*, 2, 98-105.
<http://myjms.mohe.gov.my/index.php/ijeap/article/view/8488/3684>
- Rusli, R., & Hashim, H. (2018). Implementing an Online Learning Platform in an English

- as a Second Language Context: Analyses of Blended Courses Issues and Solution. *International Journal of Engineering & Technology*, 7, 65-68.
<https://www.sciencepubco.com/index.php/ijet/article/view/21618>
- Scott, D. E., & Scott, S. (2010). Innovations in the Use of Technology and Teacher Professional Development. In J. O. Lindberg, & A. D. Olofsson (Eds.), *Online Learning Communities and Teacher Professional Development: Methods for Improved Education Delivery* (pp. 169-189). Hershey, PA: IGI Global.
<https://doi.org/10.4018/978-1-60566-780-5.ch010>
- Siemens, G. (2013). Massive Open Online Courses: Innovation in Education? In R. McGreal, R. Kinuthia, W. Marshall, S., & McNamara, T. (Eds.), *Open Educational Resources: Innovation, Research and Practice* (pp. 5-15). Athabasca, Canada: Athabasca University Press. <http://oasis.col.org/handle/11599/486>
- Singh, V., & Thurman, A. (2019). How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018). *American Journal of Distance Education*, 33, 289-306.
<https://doi.org/10.1080/08923647.2019.1663082>
- Smith, J. A., & Sivo, S. A. (2012). Predicting Continued Use of Online Teacher Professional Development and the Influence of Social Presence and Sociability. *British Journal of Educational Technology*, 43, 871-882.
<https://doi.org/10.1111/j.1467-8535.2011.01223.x>
- Solimeno, A., Mebane, M. E., Tomai, M., & Francescato, D. (2008). The Influence of Students and Teachers' Characteristics on the Efficacy of Face-to-Face and Computer Supported Collaborative Learning. *Computers & Education*, 51, 109-128.
<https://doi.org/10.1016/j.compedu.2007.04.003>
- Tay, H. Y. (2016). Investigating Engagement in a Blended Learning Course. *Cogent Education*, 3, Article ID: 1135772. <https://doi.org/10.1080/2331186X.2015.1135772>
- Teo, T., & Noyes, J. (2014). Explaining the Intention to Use Technology among Pre-Service Teachers: A Multi-Group Analysis of the Unified Theory of Acceptance and Use of Technology. *Interactive Learning Environments*, 22, 51-66.
<https://doi.org/10.1080/10494820.2011.641674>
- Thorne, K. (2020). Upskilling Teachers to Change the Lives of Children: Digital Professional Development. *Childhood Education*, 96, 54-59.
<https://doi.org/10.1080/00094056.2020.1796456>
- Venkatesh, V., & Davis, F. D. (1996). 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.tb01822.x>
- Wasserman, E., & Migdal, R. (2019). Professional Development: Teachers' Attitudes in Online and Traditional Training Course. *Online Learning Journal*, 23, 132-143.
<https://files.eric.ed.gov/fulltext/EJ1211174.pdf>
<https://doi.org/10.24059/olj.v23i1.1299>