

The Impact of e-NPQEL on the Continuance Intention of Using e-Training among Aspired School Leaders in Malaysia

<https://doi.org/10.3991/ijim.v14i19.15965>

Aziah Ismail ^(✉), Rozniza Zaharudin
Universiti Sains Malaysia, Penang, Malaysia
aziah@usm.my

Norhashimah Hashim, Joohari Ariffin
Aminuddin Baki Institute of Ministry of Education, Kuala Lumpur, Malaysia

Abstract—The continuance intention of employees to enrol in e-training depends on their program participation experience. The aim of this study is to investigate the effect of the e-NPQEL features on the continuance intention in using e-training among school leaders' candidates in Malaysia. The mediating effect of perceived usefulness on the relationship between these two variables is also investigated. 107 e-NPQEL participants completed a survey on their perception of the e-NPQEL's features and usefulness; as well as their continuance intention to use e-training. The results indicated that two features of e-NPQEL i.e. technical supports and course design, and perceived usefulness have significant direct effect on continuance intention. Furthermore, the results of the mediator effect (indirect model) suggested that the effect of technical support and course design on the continuance intention can be strengthened by the perceived usefulness of e-NPQEL. The implications of these findings for organizations to provide e-training for their employees are also discussed.

Keywords—Leadership training, e-training, aspired leaders, e-NPQEL

1 Introduction

The rapid growth of the internet has created a new learning environment and experience for learners, including workers, and has become the significant catalyst for change in many organizations [1]. This 'new normal' is not limited to the teaching and learning process at the educational institution, but often introduced at workplace as an alternate medium for professional development agendas [2] primarily to offer on-the-job training to workers through the online platform called e-training. Many previous researchers proclaim that adult learners have opted for this mode of training [3] as its advantages in connectivity/ networking, flexibility, interactivity and collaboration, and Virtual Learning Environment [4] that offers benefits, for instance, cost-effectiveness, delivery-efficiency, self-management of learning, on-demand training,

and time/place-free availability [2]. As a result, many organizations have decided to move to this new form of training so that their employees can acquire knowledge and skills with intimate learning experience, without going face to face with traditional training [5] and leaving work [6].

2 Background of Study

The discussion in this section focuses on key concepts in this study i.e. e-training for employees, e-NPQEL in leadership preparatory training program, Technology Acceptance Model (TAM), mediation model and purpose of the study.

2.1 E-training for employees

Training courses have become essential for the development of the necessary competencies for meeting the needs of organizations and for individual personal growth. This is also becoming part of the development of a knowledge society or a workforce [7][8]. However, e-training is doing this in a virtual environment. Most organizations are convinced that the emerging various technological tools and services in education [9] will bring about improvements in the professional development of their employees. According to previous studies, the use of new technologies and innovative thinking in an education environment can enable new learning opportunities through practices that would not typically be considered educational, such as the use of gaming for the creation of social, personal and creative skills [7][10].

E-training refers to a designed training program available in form of software to be installed on a computer or offered via online platform. Most of the e-training programs are focused on videos, audios animations or combination of them. As the alternative to face-to-face training, many employers provide free online training to develop the knowledge and skills of their employees for the benefits of the organizations [8]. A good online training environment should incorporate both e-training and e-learning concepts to help participants develop. Often, training and learning go hand-in-hand, as the quality of training materials can have an impact on how well workers learn and retain knowledge [7][8].

2.2 e-NPQEL in leadership preparatory training program

NPQEL is a leadership preparatory training program to prepare Malaysian future school leaders with the up-to-date knowledge and skills of leadership for them to be an effective school leader [11]. This program was initiated by IAB with the introduction of NPQH (National Professional Qualification for Headship) in 1999 that emulated from the NPQH in England. This program has undergone a number of changes to address the emerging leadership needs of school organizations. The NPQH was rebranded to NPQEL [11] in 2007 and offered to teachers who are interested in improving their knowledge and skills in school leadership with minimal entry requirements. However, in 2014, the Ministry of Education of Malaysia decided to

make it compulsory and became one of the prerequisites for those who wish to be appointed as school leaders in public schools in Malaysia [12][13]. Since the implementation, the selection process became more stringent. Participants in this program are drawn from senior teachers who have met with the strict criteria set out by the Ministry of Education of Malaysia, such as: excellence in their work, good health, who are in the position of Assistant Principal / Headmaster for at least three years and received a good recommendation from their immediate leader (Principal / Headmaster) [11][12][14].

Leadership training in Malaysia has usually been conducted in a conventional way, including the NPQEL. Prior to 2018, such training programs require participants to take a year's leave (in the NPQH program) or a 6-month leave (in the NPQEL program) to enrol in the program [11][12]. However, it has caused a range of issues with the school management process, such as seeking a replacement for empty roles, rescheduling the teaching and learning timetable, taking on new responsibilities for replacement, etc. The IAB has therefore taken the initiative to integrate e-training as part of NPQEL 2.0 [11] in 2018 and to include 30 per cent of online training in program structure [12].

The e-NPQEL (the online part of the program) provides participants with introductory knowledge and skills on school leadership such as the theory and concept of leadership, the school management model etc. The curriculum includes the core module, Educational Leadership and Management, which encompasses the four main modules with six main areas of policy and direction, instructional and achievement, change and innovation management, resource and operation, people and relationships, and personal effectiveness. All participants need to score 100% in the assessment at the end of each module in order to get badges for obtaining e-certificate within 3 weeks (21 days). It is mandatory requirement to enable them for the next stage of the program i.e. internship and face-to-face class session [11][12].

The e-NPQEL platform (as illustrated in Figure 1) was designed based on a self-directed learning methodology that provides participants with self-regulatory learning experience that they need to explore and gain information and knowledge on their own. The method depends entirely on the participants' understanding of the learning materials included in the portal, i.e. videos and articles in PDF format. During the process, the information provided in videos or articles must be analyzed in order to perform formative assessment activities before answering multiple choice quizzes at the end of each module or sub-module [11][12].

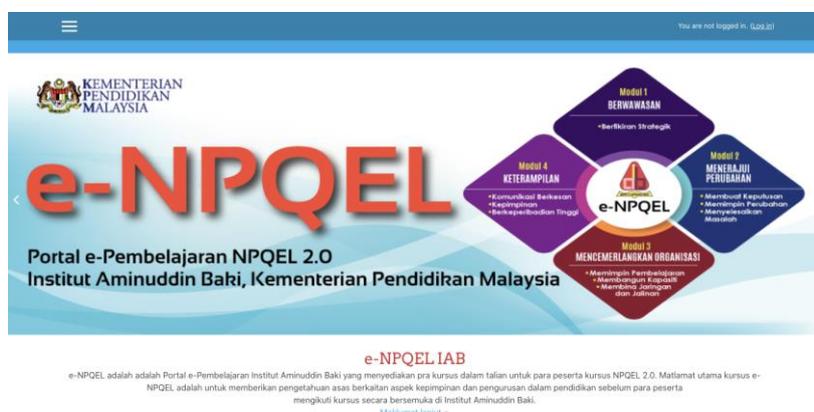


Fig. 1. e-NPQEL Portal

2.3 Technology Acceptance Model (TAM)

Technology acceptance model (TAM) was developed by Davis (1986) and was adapted from the Theory of Reasoned Action (TRA) by Ajzen & Fishbein (1980) which aim to predicts the future use of an online product before any use [15]. This model is well known and used widely by researchers in technologies research studies [16][17]. For instance, based on bibliometric analysis by using key search “TITLE-ABS-KEY ("technology acceptance model") AND (LIMIT TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017) OR LIMIT TO (PUBYEAR , 2016)) AND (LIMIT TO (DOCTYPE , "ar")) AND (LIMT TO (SRCTYPE , "j"))” indicates that within 5 recent years (2016-2020), there are 2142 articles published by journals indexed in SCOPUS employed this model [18]. However, studies in recent years have made minor modifications to TAM in order to adapt to their objectives. Unlike the original aim of TAM, the measurement of the prediction in these studies was focused on the experience of the actual use of the online product [15][17]. In these previous studies, the continuance intention of using an online product was predicted based on aspects such as the external factor (usually related to technical aspects of the product i.e. accessibility, technical support, content quality, etc) [16], users satisfaction, ease to use and perceived usefulness [19][20][21][22][23][24][25].

Many of the results of previous e-learning studies such as on cloud e-learning application[19], Massive Open Online Course (MOOC)[20], Mobile web 2.0[21], multimedia online learning [22], etc. suggested that learners' willingness to continue using the online learning platform depends on how they feel and enjoy the program[19][20]. Learners have always been identified as having a useful and enjoyable experience if the online platform is user-friendly [23]. In addition, the perceived usefulness has been identified as a significant factor in predicting the continuance intention of using an online learning platform, either amongst school or university learners or employees of the organization [3][16][21][24][25]. The results of previous

studies have contributed to the understanding of the aspects that motivate learners to continue use e-learning.

2.4 Mediation model

In statistic, a mediation model explains the indirect effect of mediator variable on a relationship between independent and dependent variable. According to Baron and Kenny [26], an independent variable (IV) is assumed to cause a dependent variable (DV) in a direct effect or also called as unmediated model (as illustrated in Figure 2).

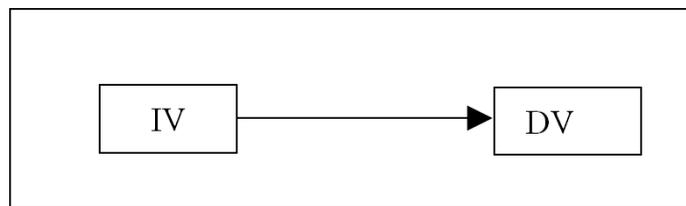


Fig. 2. Direct effect model

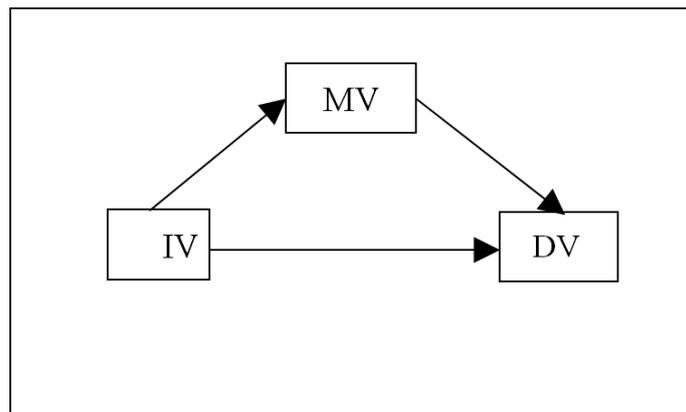


Fig. 3. Indirect/Mediator effect

However, the effect of IV on DV may be mediated by mediating variable and the IV may still affect DV is assumed in mediation model (as illustrated in Figure 3). The mediator is also called as intervening or process variable. Mediation analyses used to understand a known relationship by examining the underlying mechanism or process by which one variable influences another variable through a mediator variable. These analyses facilitate a better understanding of the relationship between the independent and dependent variables when the variables appear to not have a definite connection (after the inclusion of mediator variable) [26][27].

2.5 Purpose of this study

The implementation of e-NPQEL has changed the essence of the conventional way in Malaysian leadership preparatory training programme. The self-directed learning approach used in e-NPQEL allowed participants who considered adult professional learners to explore a different learning environment compared to their previous training experience. While they are not allowed to take any leave to participate in e-NPQEL, as teachers and middle managers they have to conduct both the learning and assessment process as well as their daily work at school. This situation has led to the question of to what extent do they accept the e-NPQEL as a training methodology to improve their knowledge, skills and attitudes in leadership? Would this form of training suit well with their situation? Were they ready in the future to engage in a similar form of online training? Thus, this study aims to investigate the effect of the e-NPQEL's features i.e. access, references, technical support and course design on the continuance intention of using e-training among the participants. Furthermore, the mediator effect of perceived usefulness in strengthening the relationship between the features of e-NPQEL and continuance intention is also investigated using indirect effect model. The results of this study are important for e-training providers, particularly government bodies such as IAB and MOE, which provide a free training program to improve their e-training programme. This research also suggests the role of usability in promoting e-training among professional adult learners; i.e. senior teachers in this research.

3 Conceptual Framework

This study was adapted from the Technology Acceptance Model (TAM) and the Mediation Model in the development of the conceptual framework. TAM is a well-known model that has been used by many previous researchers to investigate the impact of technology on user behaviour [5][15][16][19][20][21][22][23][24][25] and theorizes that perceived usefulness determines user behaviour, but at the same time that variable is influenced by external factors. Thus, in this study, the external factors are represented by e-NPQEL features i.e. access, references, technical support and course design, while user behaviour refers to participants' continuance intention in using online learning. Furthermore, the mediation model was utilised as a guide for statistical analysis in identifying the mediating effect or indirect effect of perceived usefulness of the relationship between IV and DV. The conceptual framework is illustrated in Figure 4.

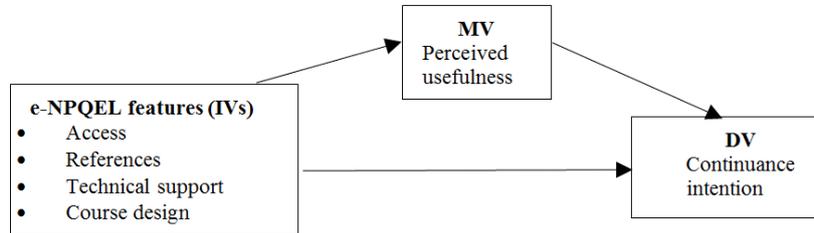


Fig. 4. Conceptual Framework

4 Methodology

4.1 Instrument

This study was utilized a survey method which using a questionnaire containing items to measure three main variables i.e. independent variables - IV (access, references, technical support, course design); mediator variable - MV (perceived usefulness) and dependent variable - DV (continuance intention). The items for each construct were adapted from previous researchers and listed in the Table 1 below:

Table 1. Items in Questionnaire

Independent variable (IV): e-NPQEL features [3][17]			
1. Access	2. References	3. Technical Support	4. Course Design
I found access to the course material flexible and convenient	Course materials were available in a format that suited me	The online support information was helpful.	The online activities encouraged me to interact with the facilitator and other students.
The online course was easy to navigate	Learning activities encouraged me to use the available learning materials and resources.	The course facilitator responded quickly to my questions.	The online activities helped me to share my ideas.
Technical aspects of accessing the course were easy to manage	Learning activities encouraged me to research for additional material	The course facilitator was regularly and frequently involved with the class discussions.	The online activities made studying the course interesting and engaging.
		The course facilitator provided effective guidance and feedback	The online activities helped me to relate different course elements (e.g. lectures, tutorials).
			The range of online course resources (e.g. lecture notes, videos, web links etc) helped me to carry out the online activities.
			The workload for the online activities was manageable.

MV: Perceived usefulness [20]
Learning to operate the e-NPQEL is easy for me
It is easy for me to become skilful at using the e-NPQEL
Using the e-NPQEL can improve my learning performance
Using the e-NPQEL can simplify the learning process
Using the e-NPQEL fits well the way I learn
The set-up of the e-NPQEL is compatible with the way I learn
DV: Continuance Intention [20]
I intend to continue using e-training in the future
I will continue using e-training in the future
I will use e-training more often

The 5-point Likert format, anchored by 5 (strongly agree) and 1 (strongly disagree), was used to measure the perception of participants to the items. An example of this was the following question: “I will continue training via online in the future”, “I will use online training more often” (strongly disagree, disagree, quite agree, agree, strongly agree). The respondents rated the items on the basis of their experience in using e-NPQEL.

4.2 Participants

A total of 119 participants of the NPQEL program (cohort of 2019) were selected as respondents using purposive sampling as questionnaires were distributed to them during face-to-face sessions at the IAB. The main criteria for the sampling process are those that have already experienced the e-NPQEL stage. Although questionnaires were distributed to 119 participants, only 107 of them were used in the data analysis for this study due to the complete response.

5 Findings

The data in this study was analysed using IBM SPSS version 24. The analysis was based on four-step procedure that proposed by Mediation Model [26]. Step 1, 2 and 3 are referred to the direct effect model using multiple regression analysis while Step 4 is indirect effect model using hierarchical linear regression. The IVs and MVs need to have significant β values in Steps 1, 2 and 3 to enable them to be eligible for mediator effect analysis in Step 4. In details, the conditions in every step of the analysis are: Step 1, IV must significantly influence the DV; Step 2, the MV must significantly influence the DV; Step 3, IV must significantly influence the MV; Step 4, comparing the effects of IV on DV with the presence or absence of MV.

5.1 Direct effect

The findings in Table 2, 3 and 4 below showed the direct effect of IV to DV, MV to DV and IV to MV using multiple regression statistical analysis.

Step 1: IV to DV (the influence of features of e-NPQEL on continuance intention)

Based on findings in Table 2, the results indicate only two of the features has significant β values i.e. technical support ($\beta=.36$, $p=.01$) and course design ($\beta=.36$, $p=.01$). This result indicates that the intention of participants to continue using online training is influenced by the technical support provided for them and the course design. Furthermore, only these two features are eligible to the analysis in Step 4.

Table 2. The influence of e-NPQEL’s features on continuance intention

Independent variable --> dependent variable	β value	p value
Access --> continuance intention	-.01	.97
References --> continuance intention	-.01	.94
Technical support --> continuance intention	.36*	.01
Course design --> continuance intention	.36*	.01
R ² = .44; F value= 19.99; p=.01		
Significant value p<.05		

Step 2: MV to DV (the influence of perceived usefulness on continuance intention)

The results in Table 3 show that perceived usefulness has significant β value ($\beta=.69$, $p=.01$). The result indicate that perceived usefulness has significant influence on continuance intention. Thus, perceived usefulness is eligible for the analysis in Step 4.

Table 3. The influence of perceived usefulness on continuance intention

Mediator variable --> dependent variable	β value	p value
Perceived usefulness --> continuance intention	.69*	.01
R ² = .47; F value= 92.77; p=.01		
Significant value p<.05		

Step 3: IV to MV (the influence of e-NPQEL’s features on perceived usefulness)

Meanwhile, the results in Table 4 indicate that only two of the e-NPQEL features has significant β values; i.e. technical support ($\beta=.33$, $p=.01$) and course design ($\beta=.39$, $p=.01$). This means that these two features i.e. technical support and course design has significant influence on the perceived usefulness of the online program. The results also indicate that these two features are eligible for the analysis in Step 4.

Table 4. The influence of e-NPQEL’s features on perceived usefulness

Independent variable --> mediator variable	β value	p value
Access --> perceived usefulness	.11	.32
References --> perceived usefulness	-.05	.69
Technical support --> perceived usefulness	.33*	.01
Course design --> perceived usefulness	.39*	.01
R ² = .51; F value = 26.13; p=.01		
Significant value p<.05		

In Step 4, the hierarchical linear regression (HLR) in IBM SPSS version 24 was utilised to analyse the mediation/ intervention effect of MV on the influence of IV on

DV. In determining the type of mediator effect, the following indicators are referred: a) Partial mediators: apply if the effects of IV with or without MV are significant and the value of beta coefficients (β) is decreases after the inclusion of MV; b) Full mediator: apply if the effect of IV on DV without significant MV is significant but insignificant with MV and the beta coefficients (β) values decreases; c) No mediator exists: occurs when the influence of IV on DV with or without mediators is significant, but the beta coefficients (β) value is increase [25][27].

Step 4: Mediation effect analysis

Table 5 shows the results of mediation effect analysis of perceived usefulness on the relationship between technical supports with continuance intention. In Table 5, the increment of R2 values from R2=.38 (without mediator) to R2=.52 (with mediator) indicates that the percentage of influence of technical support is increase from 38% to 52% after the inclusion of perceived usefulness. Meanwhile, the β values of the relationship between technical support and continuance intention decrease from β =.62, p=.01 (without mediator), to β =.30 (with mediator) after the inclusion of perceived usefulness as mediator. These results have met the ‘partial mediator’ condition as stated by Mathieu and Taylor [26]. Therefore, the result of the hierarchical regression analyses explains that the perceived usefulness is partial mediator on the relationship between technical support and continuance intention [26][28].

Table 5. The mediating effect of perceived usefulness on the relationship between technical support and continuance intention

Variable	Dependant variable		
	Technical support	Without mediator	With mediator
<i>Independent variable</i> Technical support		.62*	.30*
<i>Mediator</i> Perceived usefulness	.69*		.490*
<i>R</i>		.62	.72
<i>R²</i>		.38	.52
<i>Adjusted R²</i>		.38	.51
<i>F Value</i>		65.26*	55.86*

*Significant value p<.05

Table 6 below shows the results of mediation effect analysis of perceived usefulness on the relationship between course designs of e-NPQEL with continuance intention. The results show the increment of R2 values from R2=.38 (without mediator) to R2=.51 (with mediator) indicates that the percentage of influence of course design is increase from 38% to 51% after the inclusion of perceived usefulness. Meanwhile, the β values of the relationship between course design and continuance intention decrease from β =.60, p=.01 (without mediator), to β =.29 (with mediator) after the inclusion of perceived usefulness as mediator. This result has met the ‘partial mediator’ condition as stated by Mathieu and Taylor [28]. Therefore, the result of the hierarchical regression analyses explains that the perceived usefulness is partial mediator on the relationship between course design and continuance intention [26][28].

Table 6. The mediating effect of perceived usefulness on the relationship between course design and continuance intention

Variable	Dependant variable		
	Course design	Without mediator	With mediator
<i>Independent variable</i> Course design		.60*	.29*
<i>Mediator</i> Perceived usefulness	.69*		.49*
R		.61	.72
R ²		.38	.51
Adjusted R ²		.38	.51
F Value		65.07*	55.96*

*Significant value $p < .05$

6 Discussion

The implementation of e-NPQEL has provided a new training experience for senior teachers who intend to be school leaders in the future, compared to their previous experience in traditional leadership training, which depends on classroom activities and coaches' instruction [12]. Findings in this study indicate only two features of e-NPQEL i.e. technical support that provided in e-NPQEL and the design of the course have significant influence on their perception on the usability of e-NPQEL and their willingness to continue using e-training. The results of this study also showed that the usability of e-NPQEL for these future school leaders depends on two aspects, i.e. the technical support and the design of the course, because they are learners with experience in school leadership, and therefore they need a training course designed to improve the knowledge and skills they have already acquired. In addition, they also need the ease of manoeuvring of all information on the e-training platform, which means that technical support must be provided. This will meet their need for a user-friendly e-training platform that will motivate them to continue to use e-training in the future [22][23]. As mentioned by Bhatia [4], the features of online course need to suit with the participants' needs in order to provide an effective online learning environment to them. Participants, i.e. senior teachers, have their responsibilities as teachers and middle school managers, which required them to manage their time well [7][8][12][13]. Therefore, taking part in an e-training that allowed them to be a self-regulated learner with good course design and technical support is really helping and greatly relieving them.

Meanwhile, the findings from the indirect model analysis revealed that perceived usefulness of e-NPQEL is partial mediator to the relationship between technical support and/or course design with the continuance intention. These results indicate that usability of an e-training able to intervene the influence of technical support and course design on the intention of learners to continue using e-training as alternative for improving their leadership and work competency. In other words, the influence of technical support and course design on promoting continuance intention of using e-training can be strengthened if the e-training program perceived as useful by the

participants [26][28]. This result showed that perceived usefulness has important influence in both models i.e. direct or indirect effect model and supported by many previous studies on online learning [19-25] that perceived usefulness of e-learning product has significant role in influencing the willingness of users to continue using the product. Besides having a good technical support and well designed, the online platform for learning as well as training must be perceived as useful by the participants in motivating them to continue using it or other platforms like it. Furthermore, this usability became the value-added aspect especially for those learners who have experience in the area of training. According to Ramayah et al. [5], e-training should make it easier for participants to gain the knowledge and skills provided during the course and to successfully complete the training. This contributes to their perception of the usability of e-training in which they participate and encourages them to participate in any future online professional development training. Considering the results, the following implications are offered:

Implication 1: E-training providers have to look carefully at the design of the course offered through the online platform in order to be seen as useful by participants, in particular those who already have prior experience in the field of knowledge or skills offered in the course. Since e-training is typically based on self-directed learning, the course content and design need to add value to participants' current expertise and skills.

Implication 2: Technical support in an e-training must be given because it will offer participants a favourable attitude of the training platform. This will give a great deal of relief to participants who have a workload and at the same time need to attend compulsory e-training such as e-NPQEL.

Implication 3: Enjoyable experience while attending e-training will have a positive impact on the participants' use of e-training. That will encourage them in the future to continue to use this kind of platform. In addition, the positive view of e-training motivates participants who would be a leader of an organization, such as future school leaders in this study, to allow their employees to engage in it.

The present study is not as it is without its limitations and weaknesses. The data of this study were based on the quantitative data gathered from the self-answered questionnaire from e-NPQEL's participants' personal experience which vary among them. Thus, there is a lack of explanation on the process of how the e-NPQEL motivates the participants to continue using e-training. For this reason, future studies should aim to conduct similar research using male and female leaders as respondents and qualitative approach in data collection to investigate the process and possible leadership behaviour in influencing the organizational politics and teachers' work behaviour. Furthermore, the statistical analysis employed in this study was using HLR in IBM SPSS 24, which is claimed as not rigorous in developing a mediating model. As this study is an attempt to explore the interrelation of variables, a future study may employ structural equation modelling (SEM) or SmartPLS in testing the hypothesized mediation model developed in this study.

7 Conclusion

There is no doubt that online platform has an important role to play in delivering new information and expertise across the institutions as an alternate way [29]. Since it provides many advantages such as cost-effectiveness, accessibility, user-friendliness, broad scope etc., e-training is an important option for professional development agendas for employees. The result of this study suggested that the features of the e-training course should be considered by organizations that might want to offer their employees' online professional development training as it has a significant impact on the user's behaviour of continuing to use the online platform to acquire new knowledge and skills.

8 Acknowledgement

This work was supported by the Ministry of Education Malaysia under the Fundamental Research Grant Scheme number 203.PGURU.6711712].

9 References

- [1] Papadakis, S., Kalogiannakis, M., Sifaki, E., & Vidakis, N. "Evaluating Moodle use via Smart Mobile Phones. A case study in a Greek University". *EAI Endorsed Transactions on Creative Technologies*, 5(16), 2018. <https://doi.org/10.4108/eai.10-4-2018.156382>
- [2] C. Bo, W. Minhong, J.H.Y. Stephen & J.P. Kinshuk, "Acceptance of competency-based workplace e-learning systems: Effects of individual and peer learning support," *Computers & Education*, 52(1):1317–1333, 2002. <https://doi.org/10.1016/j.compedu.2011.01.018>
- [3] H. Z. Ng and S. S. Baharom. "An Analysis on Adult Learners' Satisfaction in Online Education Programmes," *International Journal of Interactive Mobile Technologies (IJIM)*, 12(7): 70-85, 2018. <https://doi.org/10.3991/ijim.v12i7.9665>
- [4] R.P. Bhatia, "Features and Effectiveness of E-learning Tools," *Global Journal of Business Management and Information Technology*, 1(1):1-7, 2011.
- [5] T. Ramayah, N.H. Ahmad and T.S. Hong, "An Assessment of E-training Effectiveness in Multinational Companies in Malaysia," *Educational Technology & Society*, 15(2):125–137, 2012.
- [6] Z. Sözügün, Z. Altınay, M. Berigel. *et al.* "A practice of e-learning platform in fostering professional development," *Qual Quant*, 52(79–92), 2018. <https://doi.org/10.1007/s11135-017-0589-1>
- [7] M. Mueen & S. Rosnafizah. "A Study on E-Training Adoption for Higher Learning Institutions." *International Journal of Asian Social Science*, 3(9):2006-2018, 2013
- [8] C. Östlund. "Design for e-training," PhD Series, No. 18.2017, ISBN 9788793579095, Copenhagen Business School (CBS), Frederiksberg, <http://hdl.handle.net/10398/9478>, 2017.
- [9] M. Kalogiannakis, & S. Papadakis. "Combining mobile technologies in environmental education: a Greek case study," *Int. J. Mobile Learning and Organisation*, 11(2): 108–130, 2017. <https://doi.org/10.1504/ijmlo.2017.10005249>
- [10] N. Vidakis, A. Barianos, A. Trampas, S. Papadakis, M. Kalogiannakis, & K. Vassilakis. "Generating Education in-Game Data: The Case of an Ancient Theatre Serious Game". In

- Proceedings of the 11th International Conference on Computer Supported, pp. 36-43, 2019. <https://doi.org/10.5220/0007810800360043>
- [11] AminuddinBaki Institute, “e-NPQEL: NPQEL 2.0 E-learning Portal,” *AminuddinBaki Institute*, 2020. [online]. Available: <http://npqel.iab.edu.my/>. [Accessed: January, 2020].
- [12] G. Singh & B. Singh. “Restructuring the National Professional Qualification For Educational Leaders (NPQEL) In Malaysia: A Summary Report,” *International Online Journal of Educational Leadership*, 3(2): 4-21, 2019.
- [13] A.Y.M. Ng, “School leadership preparation in Malaysia: Aims, content and impact,” *Educational Management Administration & Leadership*, 45(6):1002–1019, 2017. <https://doi.org/10.1177/1741143216662922>
- [14] Ministry of Education Malaysia. “Requirement for NPQEL Candidates.” Accessed from <https://bit.ly/329IIGQ> on 24th July 2020.
- [15] J.R.L. UrškaLah & Š. Boštjan. “Perceived Usability and the Modified Technology Acceptance Model,” *International Journal of Human–Computer Interaction*, 36(13):1216–1230, 2020.
- [16] S. A. Salloum, A. Q. M. Alhamad, M. Al-Emran, A. A. Monem & K. Shaalan. “Exploring students’ acceptance of e-learning through the development of a comprehensive technology acceptance model.” *IEEE Access*, 7:128445–128462, 2019. <https://doi.org/10.1109/access.2019.2939467>
- [17] I.F Liu, M.C. Chen, Y.S. Sun, D. Wible, and C.H. Kuo. “Extending the TAM model to explore the factors that affect Intention to Use an Online Learning Community,” *Computers & Education*, 54:600–610, 2010. <https://doi.org/10.1016/j.compedu.2009.09.009>
- [18] Scopus database, www.scopus.com, access on 30th June 2020.
- [19] S. L. Lew, S. H. Lau & M. C. Leow. “Usability factors predicting continuance of intention to use cloud e-learning application.” *Heliyon*, 5(6), e01788. 2019. <https://doi.org/10.1016/j.heliyon.2019.e01788>
- [20] A. A. Daneji, A. F. M. Ayub & M. N. M. Khambari. “The Effects of Perceived Usefulness, Confirmation and Satisfaction on Continuance Intention in Using Massive Open Online Course (MOOC).” *Knowledge Management & E-Learning*, 11(2): 201-214, 2019. <https://doi.org/10.34105/j.kmel.2019.11.010>
- [21] M. Dalvi-Esfahani, L. Wai Leong, O. Ibrahim & M. Nilashi. “Explaining students’ continuance intention to use Mobile web 2.0 learning and their perceived learning: An integrated approach.” *Journal of Educational Computing Research*, 57(8):1956-2005, 2020. <https://doi.org/10.1177/0735633118805211>
- [22] T. Hariguna, “Assessing students’ continuance intention in using multimedia online learning.” *Telkomnika*, 17(1): 21-30, 2019. <https://doi.org/10.12928/telkomnika.v17i1.10328>
- [23] J. S. C. Yim, P. Moses & A. Azalea. “Predicting teachers’ continuance in a virtual learning environment with psychological ownership and the TAM: A perspective from Malaysia.” *Educational Technology Research and Development*, 67(3): 691-709, 2019. <https://doi.org/10.1007/s11423-019-09661-8>
- [24] R.S. Al-Maarof, S.A. Salloum, A.Q.M. AlHamadand, K. Shaaland. “Understanding an Extension Technology Acceptance Model of Google Translation: A Multi-Cultural Study in United Arab Emirates”, *International Journal of Interactive Mobile Technologies*, 14(3): 157-178, 2020. <https://doi.org/10.3991/ijim.v14i03.11110>
- [25] J.G. Maggay, “Usability Evaluation of SMS-Based System: Basis for Systems Development”, *International Journal of Interactive Mobile Technologies*, 13(9): 113-125, 2019. <https://doi.org/10.3991/ijim.v13i09.10918>
- [26] R.M, Baron and D.A. Kenny, “The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations,” *Journal of*

- Personality and Social Psychology*, 51: 1173-1182, 1986. <https://doi.org/10.1037/0022-3514.51.6.1173>
- [27] J. Cohen, P. Cohen, S. G. West, L. S. Aiken. “*Applied multiple regression/correlation analysis for the behavioural sciences* (3rd ed.)” Mahwah, NJ: Erlbaum, 2003.
- [28] J.E. Mathieu and S.R. Taylor, “Clarifying conditions and decision points for mediational type inferences in Organizational Behaviour,” *Journal of Organizational Behaviour*, 27: 1031–1056, 2006. <https://doi.org/10.1002/job.406>
- [29] S. Papadakis, M. Kalogiannakis, E. Sifaki, E., N. Vidakis, “Access Moodle using smart mobile phones. A case study in a Greek University”. In *Interactivity, Game Creation, Design, Learning, and Innovation* (pp. 376-385). Springer, Cham, 2017. https://doi.org/10.1007/978-3-319-76908-0_36

10 Authors

Aziah Ismail currently works at the School Educational Studies in Universiti Sains Malaysia. Her current project is on “Model Development of Novice School Leaders Adaptation to the School Leadership”. Email: aziah@usm.my/ msaziah@gmail.com

Rozniza Zaharudin is a lecturer in School of Educational Studies in Universiti Sains Malaysia. Her research projects are on the area of Educational Technology and Special Education.

Noor Hashimah Hashim is a lecturer for the NPQEL 2.0 program in Aminuddin Baki Institute. Email: noorhashimah@iab.edu.my

Joohari Ariffin is the Director of Aminuddin Baki Institute, Northern Branch. Email: joohari@iab.edu.my

Article submitted 2020-06-02. Resubmitted 2020-08-22. Final acceptance 2020-08-22. Final version published as submitted by the authors.