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Student Experiential E-Learning in Higher Learning Institutions

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Abstract

The main objectives of this research are to develop the items of students' experiential e-learning scale, to verify and construct validate the psychometric properties of students' experiential e-learning measurement model. The study also aimed to investigate the experiential e-learning of students in higher learning institutions in Malaysia. This research is quantitative in nature employing the cross-sectional survey design. The Standards for Educational and Psychological Testing will be adapted in the development of the instrument. Content validity ratio (CVR) and Exploratory Factor Analysis (EFA) will be used to analyze the corresponding items of experiential e-learning constructs. The psychometric properties of experiential e-learning measurement model will be empirically tested via Confirmatory Factor Analysis (CFA). This will be accompanied by a descriptive study to explore the students' experiential e-learning. Exploration of students' experiential e-learning in higher learning institutions can provide further insights into what works in an open online environment. This research will produce an adequate measurement model and a psychometrically sound instrument of students' experiential e-learning as well as the publications and intellectual properties (IP).

Keywords: experiential e-learning, e-learning measurement model, content validity ratio, exploratory factor analysis, confirmatory factor analysis

1. Introduction

1.1 Background of the Study

Online learning, also referred to as e-learning, is a method of empowering students with an unlimited and continuous access to a huge variety of learning materials with lecturers or teachers serving as mentors to guide the learning process. E-Learning have been identified as a potential innovation for improving traditional teaching and learning in order to respond to the technologically driven environment of 21st century education (Pham & Tran, 2020). The demand continued to rise due to its capability to reach global audiences, and its unique functionality, accessibility and flexibility over the long term. E-learning allows students to have the skills and competencies needed by the digital-driven industry. However, the question is "are e-learning platforms capable of promoting experiential learning where students learn

by doing, reflecting and implementing what they have learned?" By its nature, it is argued that e-learning is not 'real world' and it is difficult to have real world examples or experiences. Advocates of experiential learning are often highly critical of e-learning because it is impossible to embed e-learning in real word examples.

Experiential learning is a process that enables students to acquire information and skills from their own experience. It has helped students to grasp scientific principles and contributes to better performance (Lepp et al., 2017). Dewey's experiential learning theory stressed that students learning can be enhanced through valuable fieldwork in order to inspire academic interest (Dewey, 1986). Learning by doing facilitated through an effective experiential learning practices has a direct association to students' graduate attribute skills and needs. According to Malaysia Education Blueprint, MEB (2015-2025), Malaysia Ministry of Higher Education (MoHE) has included experiential learning in one of the 10ths shifts statements to create holistic, entrepreneurial and balanced graduates. Previous research by Siew (2017) had stated that students in Malaysian higher learning institutions lack experiential e-learning and 21st century skills. In this sense, students must be encouraged to become lifelong learners in order to develop the skills and knowledge necessary for our modern knowledge society. In order to achieve these outcomes, the Ministry and higher learning institutions concentrate on leveraging technology-enabled models to facilitate more experiential e-learning and thus to develop 21st century skills. A contemporary learning modality that combines e-learning and experience learning provides a lot of room for investigation.

1.2 Problem Statement

In the Malaysian context, most experiential learning studies have concentrated in a conventional way, leaving a wide gap in exploration of experiential e-learning environment (Donnie et al., 2018; Rasika et al., 2019). Research by Abdul Aziz and Abdul Aziz (2019) and Teoh and Yap (2018) focus on the evaluation of experiential learning in conventional classrooms. Very limited research has been conducted to quantify experiential learning on the e-learning platform and to develop measurement models relevant to students' experiential e-learning construct. The recent development of e-learning initiative in Malaysia due to Covid-19 pandemic has made the measuring scale of experiential e-learning becomes more significant. Study by Azizah et al. (2018) provided a conceptual framework of experiential e-learning and proposed the development of experiential e-learning instrument for further study. The recommendation is made in lieu of the importance to measure experiential e-learning among higher learning institutions students in order to develop the needs of graduate students and 21st century (MEB, 2015) skills. In addition, research involving model and scale development in e-learning has been described as critical for enhancing the implementation of e-learning platforms (Ghazali & Nordin, 2016; Zawacki-Richer et al., 2018). Therefore, the goal of this research is to develop a scale and measurement model, thus exploring the experiential e-learning of students in higher learning institutions in Malaysia.

1.3 Research Objectives

This study is to answer the question that focuses on the issues that involved in the problem statement. The following questions is as follows. Below are the research objectives and

research questions that strategically curated to meet the need of this research:

RO1: To develop the items of students' experiential e-learning scale.

RO2: To verify and construct validate the psychometric properties of students' experiential e-learning measurement model

RO3: To investigate the experiential e-learning of students in higher learning institutions in Malaysia

The research questions are as follows:

RQ1: What are the items of students' experiential e-learning scale?

RQ2: Are the measurement models of students' experiential e-learning psychometrically sound in terms of validity and reliability?

RQ3: What is the level of students' experiential e-learning in Malaysia higher learning institutions?

2. Literature Review

Developing psychological measure or instrument is an extensive and time-consuming process. There are a few guides or models of instrument development proposed by previous researchers (e.g. AERA, APA & NCME, 2014; Cohen & Swerdlick, 2010; Gregory, 2007; MacKenzie et al., 2011; Miller et al., 2013). Most of them proposed the steps required to develop the instrument from beginning to the end. In developing the instrument for this research, the following steps and procedures will be adapted from the Standards for Educational and Psychological Testing (AERA, APA & NCME, 2014; referred to hereinafter as the Standards). They were chosen for the current research because the suggested steps align with the study's objectives. The Standards have also been utilized all across the world and have undergone reviews and revisions by many professionals.

The Standards, which are the result of cooperation between three organizations—the American Psychological Association (APA), American Educational Research Association (AERA), and National Council on Measurement in Education (NCME)—outline professional guidelines to promote sound and ethical use of tests and serve as a foundation for assessing the quality of testing practices (AERA, APA & NCME, 2014). The Standards offer important guidance for test developers, publishers, test users, and everyone who receives and interprets test results on key elements in a testing procedure (Plake & Wise, 2014). The latest 2014 version is the 5th revision of the original 1954 edition of the Standards, entitled 'Technical Recommendations for Psychological Tests and Diagnostic Techniques'. Beginning in 1954, the Standards were amended four times: in 1974, 1985, and 1999. The most recent edition of the Standards, published in 2014, is the culmination of the efforts of many dedicated individuals, and it includes in-depth commentary on whether and why the 1999 Standards required revision from experts in the field. The Standards need to be constantly updated because educational and psychological testing is a dynamic field that requires support for its increasing and expanding use (Plake & Wise, 2014).

In this research, the researcher decided to develop the student experiential e-learning measuring scale. Experiential learning is learning by doing, reflecting and applying what was learned (Ary et al., 2013). Through the method of experiential learning, students can gain knowledge and skills from their own experiences rather than through conventional training courses. Traditional learning methods are much less effective than experiential learning, which includes a variety of engaging and participatory hands-on tasks. Experiential learning essentially integrates theory and practice. Nevertheless, it seems that e-learning design has been adapted so as to provide students more holistic learning support by utilizing the environment, learning activities, multisensory exposure, emotions, and various forms of intelligence reflected in the learning combination lock. The fusion of e-learning, supported by theories of experiential learning, should improve the integration of pedagogy and technology.

E-Learning does not require learners to be co-located with lecturers or instructors. Learning can be performed at the student's pace. Referencing David Kolb's experiential learning theory, the online application should adopt a holistic approach that takes cognition, environmental factors, and emotions into account to have an impact on the learning process (Chen, 2014). Students and teachers that engage in effective experiential learning become more capable change agents, foster a sense of community, and master both skills and knowledge. In an experientially infused e-learning course, both students and teachers follow a similar process. Teachers establish and cultivate environments where direct instruction only serves to promote student learning by putting an emphasis on the student experience. Students participate in a variety of active learning activities in real-world contexts, draw from their personal and/or collective experiences, and create connections between what they are learning and the circumstances they expect to encounter in the future (Din, 2012). Hence, experiential e-learning encourage students to learn by doing, observing, practicing and simulates direct experiences in an online learning environment (Goh et al., 2017).

Experiential e-learning among higher learning institutions students is important in order to develop 21st century skills (critical thinking, communication, collaboration, creativity) (MEB, 2015) and the attribute needed among graduate students. Learning activities and assignments in an online environment are designed in variability ways that students are able to engage with the content, the instruction and their peer in the real-world scenario to encourage experiential e-learning (Goh et al., 2017). The taxonomy of experiential e-learning discusses the degree of experiential learning involves in an open online environment. The first type of experiential e-learning taxonomy is content sharing, which involves the least amount of experiential learning. Students participate by reading texts, watching videos, or listening to podcasts. The experiential component is only used at this level to help students interpret what they read or saw by having them recollect earlier experiences. Online conversations are Type 2. Students and instructors converse online for the purpose of instruction in this type of online learning. This online dialogue frequently takes the form of discussion forums where students in an e-learning course have to respond to questions posted by the instructor, post their own questions, and reply to posts made by other students. The instructor prompted conversational interactions that the students have at this level.

Meaningful online conversation falls under Type 3 of the experiential e-learning taxonomy.

At this level, students' conversational interaction provides the experiential component. Instead of being constrained by requirements set out by the instructor, the online dialogue develops from the experiences and wants of the students. Hence, communication among students was encouraged through Type 2 and 3. In the 21st century, communication refers to both listening abilities and the capacity to communicate effectively verbally, in writing, and via a number of digital platforms. Utilizing student experiences constitutes Type 4. With this method, the students are actively involved in the preparation and delivery of instruction, putting their experiences at the forefront. At this stage, students specify goals and learning activities, which makes the experiential component more apparent. As students set their goals, they reflect on and emphasize their personal experiences to determine the subjects and activities that would be most relevant to them.

Problem-based or service learning is Type 5 of experiential online learning's taxonomy. The instructional material in this category of e-learning is built on actual problems that occur in an actual organization. Direct experience or action learning is the final type of taxonomy experiential e-learning. The activities under this type of experiential e-learning are planned and initiated by the students, as opposed to problem-based/service learning. At the lowest levels of the taxonomy, the role of experience is restricted to recalled events, whereas direct experience is involved at the higher levels. This taxonomy's lower levels could be viewed as "passive" experiential e-learning, whilst its upper levels could be considered of as "active" experiential e-learning (Baheiraie et al., 2017). Active doing and experimentation in e-learning simulations allow students to apply their knowledge in different scenarios and situations. E-learning simulations enable the students to be better prepared, more confident and master the skill before they apply at work (Malhotra et al., 2019). In a nutshell, experiential e-learning inculcates the development of 21st century skills among higher learning institutions students. Students manage to design projects, solve problems, make effective decisions using a variety of resources, enhancing creativity and social networking skills.

3. Methodology

This research is purely quantitative in nature employing the cross-sectional survey design. The survey design can be utilized to explain the characteristics of a population (Ary et al., 2013), test hypotheses, identify beliefs and attitudes (Creswell, 2012). This approach is very appropriate to collect enough data from a large enough sample to test the research hypotheses and generalize the results from the sample to the predefined population. The population in this research is decided to those students from five public universities in Malaysia who have had some experience with e-learning and voluntarily to participate in the research. The population is decided as such so that the research will provide a clear sampling frame to make simple random sampling possible. In developing the scale for this research, all measures and procedures are adapted from The Standards for Educational and Psychological Testing (APA, AERA & NCME, 2014). The proposed process of data collection is illustrated as in Figure 1.

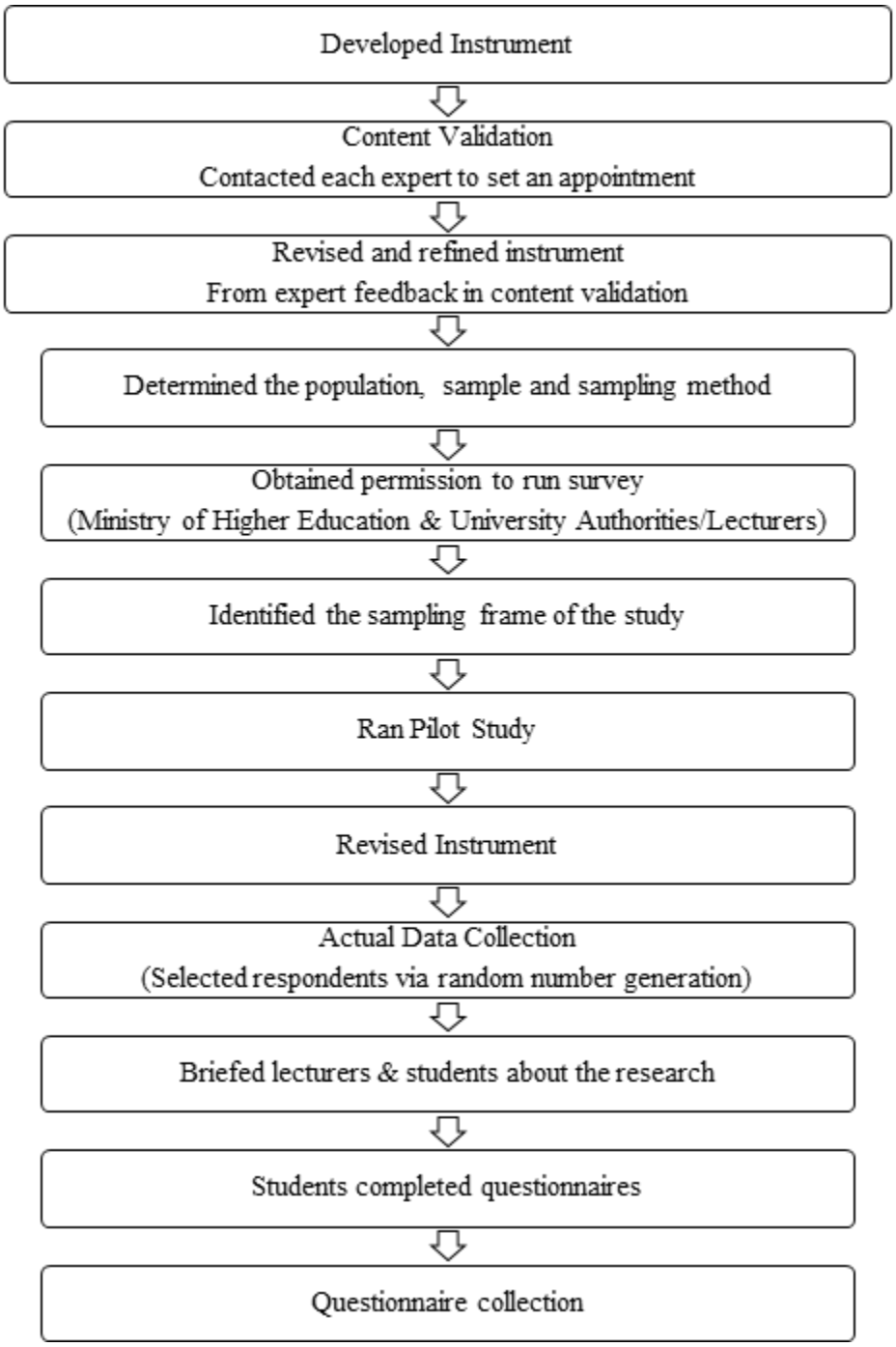

Figure 1. Proposed Data Collection Process

3.1 Content Validity Ratio

In the process that involve a panel of experts to assess content validity, the researcher will contact each expert either by phone or e-mail and met them in person. Content Validity Ratio (CVR) will be used for measuring the content validity of the scale in this research. CVR is a method from the classical measurement literature. It is practical in terms of time, cost, ease of administration and speed of implementation (Ghazali et al., 2016). The panel in this content validity process is made up of two categories of experts: professional experts and field

experts. In this research, senior lecturers who expert in psychometrics, e-learning, educational teaching and learning will be called in as professional experts while the field experts consist of doctoral candidates from public universities specializing in particular fields of research. A twenty-expert panel (professional experts and field experts) will be proposed to review the items of content and dimension representativeness, clarity, relevance and format. The panel of experts also require checking on item clarity and to comment on scale instructions, item format, sentences and response options in competing the evaluation. Each expert will be given a consent form in which they express their willingness to participate in the study. The percentage of expert agreement will be computed using the following formula:

Content validity ratio, $CVR = (\eta^e - N/2) / (N/2)$

where η^e = number of panelists indicating "essential"

N = total number of panelists

Content validity ratio (CVR) values range from -1 to +1, where a value will be positive if more than half of the panel experts indicate the item as essential. It will be 0 if only half of the panel members indicate the item as essential, and negative if less than half of the panel members indicate the item to be essential. The present research agreed to follow the revised CVR values by Colin and (Maat et al., 2015), who stated the minimum value (critical value) that must be reached for each item based on the total number of experts. This means that if there are items that failed to meet the minimum requirements value, the items will automatically be retained, refined or dropped (Goto et al., 2022). This rule is in line with that items that did not achieve the minimum expert agreement must either be revised or eliminated from the measuring scale. The findings of CVR values enabled the researcher to improve the scale and determine which items to retain and which items to remove. Each item will also be revised after all comments from the experts have been considered.

After revising and refining the items based on Content Validity Ratio (CVR) and expert feedback, the researcher determines the population, sample and sampling method of the research. To be able to administer the survey, the researcher will be obtained a permission from the Planning, Research and Policy Coordination Division, Ministry of Higher Education Malaysia. Before running the actual survey, a pilot study will be conducted. The pilot study administer in this research is intended to check whether the items are clear in meaning to the respondents and to establish the instrument's construct validity and reliability. To further refine the instrument, the researcher also sought feedback and suggestions from the respondents. The researcher proposed to administer to two hundred (n = 200) respondents who volunteer to fill in the questionnaire for pilot study in this research. They all should have an experience using e-learning platform.

3.2 Exploratory Factor Analysis

Exploratory factor analysis (EFA) is a statistical method widely used in various fields, including psychology, education, and public health, to identify the underlying structure of a set of variables (Watkins, 2018). EFA aims to uncover the patterns of relationships among observed variables and to identify the underlying constructs or factors that explain these

patterns (Wibaningrum & Aurellya, 2020). It is particularly useful in the development and validation of psychological theories and measurements (Watkins, 2018). EFA involves analyzing responses and grouping questions together in factors that explain covariation in the variable being studied (Martin, 2022). The method is used to assess construct validity and determine the appropriate number of factors or dimensions. Moreover, EFA can identify distinct vulnerability types and their associations with specific risk factors (Shipstone et al., 2020).

EFA is a multivariate statistical method that aims to identify the factors of hypothetical constructs and determine the most appropriate number of factors or dimensions (Windasari et al., 2022). It is also used to create robust economic and cultural capital profiles that reflect the capital within a specific field or context (Griffiths, 2018). Additionally, EFA can be incorporated with principal component analysis and varimax rotation to explore the underlying factor structure of a scale (Avci, 2023). The method is also utilized to develop and validate scales for specific skills or competencies, such as e-content preparation skills (Tekin & Polat, 2016). EFA is a valuable tool in the development and validation of scales and instruments. It helps identify the underlying factors and dimensions of constructs, ensuring that the scale measures what it intends to measure (Tekin & Polat, 2016; Watkins, 2018; Yu & Richardson, 2015). It can also be used to assess the relationship patterns between variables or constructs and the factors inherent in each construct. EFA aids in the identification of inappropriate items that can be removed from the scale, increasing its reliability (Albishri & Zamzami, 2021; Amin et al., 2018). Additionally, EFA can be used to classify items into factors, providing a better understanding of the structure of hypothetical constructs (Windasari et al., 2022).

In this pilot study, Exploratory factor analysis (EFA) and reliability analysis will be run on the data to examine the construct validity and reliability of the instrument. Careful consideration will also be given to any feedback and suggestion given by respondents to further improve the quality of the instrument. The researcher will be revised the instrument based on the results of the pilot data in order to improve the quality of the instrument.

In the actual survey, the respondents will be selected randomly from the sampling frame based on Krejcie and Morgan's (1970) guidelines for deciding a minimum sample size. The target sample in the actual survey is n=400 respondents from five public universities in Malaysia. At the start of data collection, the researcher will give a short briefing to explain the research, its purpose and how to respond procedures to the lecturers and students. Students will be given 15 minutes to complete and return the questionnaire immediately. The time is ample for them to respond on the spot, thereby minimizing the risk of losing the questionnaire.

In summary, exploratory factor analysis (EFA) is a statistical method used to assess construct validity by identifying the underlying factors and dimensions of constructs. It helps determine the appropriate number of factors and assess the relationships between items and factors. EFA is often used in conjunction with confirmatory factor analysis (CFA) to validate the factor structure identified in EFA. By employing EFA, researchers can develop and validate scales

and instruments, ensuring their reliability and validity.

3.3 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a statistical technique used to validate the measurement model of a set of observed variables by testing the underlying factor structure proposed by the researcher (Maat, 2015). It is a widely used method in various fields such as psychology, marketing, and medicine to confirm the presence of latent constructs and their relationships with observed variables. CFA is particularly valuable in providing a hypothesis-driven approach to model testing, as it allows researchers to assess whether the data support the hypothesized relationships among factors and observed variables. This is in contrast to exploratory factor analysis (EFA), which is a data-driven approach that does not require a priori specification of the factor structure.

The application of Confirmatory Factor Analysis (CFA) has been demonstrated in diverse areas, showcasing its versatility and applicability across various disciplines. In the field of medicine, CFA has been utilized to analyze the metabolic syndrome structure (Smith et al., 2020). Additionally, in decision sciences, CFA has been employed to examine board composition (Smith et al., 2020). Furthermore, in computer science, CFA has been used to validate an innovative measurement for game immersion (Murray et al., 2018). Moreover, CFA has been instrumental in examining the structure of intellectual capital and its contribution to competitive advantage in small and medium (Ahmed et al., 2022). In psychology, CFA has been applied in the development and validation of instruments, such as the Burden Scale for Family Caregivers-Short Form.

Model fit is a crucial aspect of CFA, as it determines the degree to which the hypothesized model fits the observed data (Anderson & Gerbing, 1988). Good model fit indicates that the proposed factor structure adequately represents the relationships between the observed variables (Rahimi et al., 2023). Commonly used fit indices, such as chi-square, root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR), are employed to assess model fit (Goto et al., 2022; Rahimi et al., 2023). A good fit is indicated by non-significant chi-square values, low RMSEA and SRMR values (close to or below 0.08), and high CFI values (close to or above 0.95) (Goto et al., 2022; Rahimi et al., 2023; Yirci et al., 2016).

Validity assessment is another important aspect of CFA, providing evidence of construct validity by examining the relationships between observed variables and latent factors (Kocoglu-Tanyer et al., 2020). CFA allows researchers to assess convergent validity, which refers to the degree to which different indicators of the same construct are related to each other (Arissaryadin et al., 2022). Additionally, CFA enables the evaluation of discriminant validity, which assesses the distinctiveness of different constructs by examining the correlations between latent factors (Arissaryadin et al., 2022; Feldt et al., 2011).

In summary, Confirmatory Factor Analysis (CFA) is a statistical method used to assess model fit, validity, and reliability across various disciplines. It plays a crucial role in evaluating the fit of hypothesized models, establishing construct validity, and determining the reliability of

measurement scales. In this study, Confirmatory Factor Analysis (CFA) will be employed to test for model fit, validity, and reliability, followed by descriptive analysis to identify students' experiential e-learning in higher learning institutions.

4. Conclusion

The experiential e-learning model could render it possible for teachers, curriculum and instructional designers to develop a holistic understanding of the components that support students' experiential learning. A validated students' experiential e-learning instrument produce from the research can be used as a diagnostic tool to assess the level of students' experiential e-learning. Students, instructors, lecturers, and higher education institutions may find the findings informative and valuable. Students can assess their experiential learning levels and have the required adjustments to make their e-learning more successful and relevant. They may also help lecturers or instructors understand the general and specific levels of experiential learning among their students. This information may then be utilized to improve students' experiential learning by providing them with clear, supportive, and consistent feedback. It can offer detailed information to teachers so they can adopt mastery goals and constructivist instructional strategies, which could result in more meaningful teaching and learning in an e-learning environment. The results will also help with designing of professional development courses or programs in fields where teachers and students perform less effectively. Generally, the validated model and instrument could aid in understanding of experiential e-learning, thus contributing to the body of knowledge and literature on online learning. In future, the validated instrument can be developed in more interactive and user-friendly application platform.

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References

Abduh, A., Sakkir, G., Rosmaladewi, R., Andrew, M., & Yasdin, Y. (2022). Teachers' perceptions of english teaching strategies in the current curriculum change. *International Journal of Language Education, 6*(4), 437. https://doi.org/10.26858/ijole.v6i4.25246

Abdul Aziz, N. M., & Abdul Aziz, A. (2019). Experiential learning approach to writing in an esl classroom: A case study in a Malaysian sub-rural school. *Asian Journal of Research in Education and Social Sciences, 1*(1), 7-16.

Abrahams, F. (2015). Another perspective. *Music Educators Journal, 102*(1), 97-100. https://doi.org/10.1177/0027432115590860

Ahmed, A., Bhatti, S. H., Gölgeci, I., & Arslan, A. (2022). Digital platform capability and organizational agility of emerging market manufacturing SMEs: The mediating role of intellectual capital and the moderating role of environmental dynamism. *Technological Forecasting and Social Change, 177,* 121513.

Albishri, F., & Zamzami, L. (2021). Perception of effects of shiftwork questionnaire (pesq) among ambulance service staff in Saudi Arabia: An exploratory factor analysis. *Open Journal of Emergency Medicine*, *09*(03), 123-134. https://doi.org/10.4236/ojem.2021.93012

American Psychological Association (APA), American Educational Research Association (AERA), & National Council on Measurement in Education (NCME). (2014). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.

Amin, S., Kartowagiran, B., & Inang, P. (2018). A factor analysis of an instrument for measuring physical abuse experience of students at school. *Research and Evaluation in Education*, *4*(1), 22-34. https://doi.org/10.21831/reid.v4i1.18831

Amoako, R., Attia, I., Awini, A., & Denteh, R. (2021). Colleges of education tutors' perceptions on the adaptation and modification approaches for children with special educational needs and disabilities in Ghana. *European Journal of Education Studies*, *8*(5). https://doi.org/10.46827/ejes.v8i5.3756

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Arissaryadin, A., Yuliati, Y., Hidayat, K., & Cahyono, E. (2022). A questionnaire to determine the work motivation of agricultural extension workers in indonesia. *Agricultural Social Economic Journal*, *22*(2), 103-109. https://doi.org/10.21776/ub.agrise.2022.022.2.4

Ary, D., Jacobs, L., Sorensen, C., & Walker, D. (2013). *Introduction to research in education*. Cengage Learning.

Avci, I. (2023). Health belief scale for urinary incontinence and kegel exercise. *Journal of Wound Ostomy and Continence Nursing*, *50*(5), 406-412. https://doi.org/10.1097/won.0000000000001008

Aydin, A., & Kabasakal, E. (2022). Turkish adaptation of the aging anxiety scale for middle-aged women: validity and reliability study. *Journal of Basic and Clinical Health Sciences*, *6*(1), 173-180. https://doi.org/10.30621/jbachs.974023

Azizah, S., Muhammad Rafie, M. A., & Norhaliza, I. (2018). Acceptance factor of mobile learning application for adult learners in lifelong learning education. *Journal of Physics: Conference Series*, *1019*(1), 1-8.

Baheiraei, A., Khoori, E., Ahmadi, F., Foroushani, A. R., Ghofranipour, F., & Weiler, R. M. (2013). Psychometric properties of the adolescent health concern inventory: The Persian version. *Journal of Psychiatry*, *8*(1), 28–36.

Bay, T., Yalcin, I., & Ergün, A. (2023). Bergen insomnia scale for adults: the psychometric features of the turkish version. *Clinical and Experimental Health Sciences*, *13*(1), 192-198. https://doi.org/10.33808/clinexphealthsci.1084321

Benton, C. (2013). Promoting metacognition in music classes. *Music Educators Journal, 100*(2), 52-59. https://doi.org/10.1177/0027432113500077

Cai, H., & Liu, G. (2022). Exploring the learning psychology mobilization of music majors through innovative teaching methods under the background of new curriculum reform. *Frontiers in Psychology, 12*. https://doi.org/10.3389/fpsyg.2021.751234

Cao, H. (2021). Innovation and practice of music education paths in universities under the popularity of 5g network. *Wireless Communications and Mobile Computing, 2021,* 1-11. https://doi.org/10.1155/2021/3570412

Çapan, B., & Bakioğlu, F. (2016). Adaptation of collective moral disengagement scale into turkish culture for adolescents. *Universal Journal of Educational Research, 4*(6), 1452-1457. https://doi.org/10.13189/ujer.2016.040624

Chang, C., Cheng, S., Chang, I., Liaw, F., & Cheng, C. (2021). The development of “early childhood education & care curriculum framework implementation scale” in taiwan. *The Hungarian Educational Research Journal*, *11*(4), 377-395. https://doi.org/10.1556/063.2021.00041

Chen, X., Zhang, Z., & Zheng, Z. (2023). Research and practice of project-based curriculum politics evaluation system. *Journal of Education and Educational Research, 2*(3), 68-71. https://doi.org/10.54097/jeer.v2i3.7305

Cohen, R. J., & Swerdlik, M. E. (2010). *Psychological testing and assessment: An introduction to test and measurement* (8th ed.). Boston: McGraw-Hill.

Coulson, A., & Burke, B. (2013). Creativity in the elementary music classroom: a study of students’ perceptions. *International Journal of Music Education*, *31*(4), 428-441. https://doi.org/10.1177/0255761413495760

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.

Dewey, J. (1986, September). Experience and education. In The educational forum (Vol. 50, No. 3, pp. 241-252). *Taylor & Francis Group*.

Din, R., Norman, H., Kamarulzaman, M. F., Shah, P. M., Karim, A., Salleh, N. S. M., Zakaria, M. S. & Mastor, K. A. (2012). Creation of a knowledge society via the use of mobile blog: A model of integrated meaningful hybrid e-training. *Asian Social Science*, *8*(16), 45-56.

Donni, R., Dastane, O., Haba, H., & Selvaraj, K. (2018). Consumer perception factors for fashion m-commerce and its impact on loyalty among working adults. *Business and Economic Research*, *8*(2), 168. https://doi.org/10.5296/ber.v8i2.13044

Draper, E. (2019). Creating a meaningful music curriculum for students with disabilities. *General Music Today*, *33*(1), 47-49. https://doi.org/10.1177/1048371319863792

Feldt, R., Graham, M., & Dew, D. (2011). Measuring adjustment to college: construct validity of the student adaptation to college questionnaire. *Measurement and Evaluation in*

Counseling and Development, *44*(2), 92-104. https://doi.org/10.1177/0748175611400291

Ghanbari-Homaie, S., Jafarabadi, M., Hasani, S., & Mirghafourvand, M. (2021). Psychometric properties of the persian version of pregnancy symptoms inventory (psi). *Clinical Nursing Research*, *31*(5), 960-967. https://doi.org/10.1177/10547738211067319

Ghazali, N., & Nordin, M. S. (2016). The perception of university lecturers of teaching and learning in Massive Open Online Courses MOOCs. *Journal of Personalized Learning*, *2*(1), 52–57.

Ghazali, N., Nordin, M. S., Hashim, S., & Hussein, S. (2018). Measuring content validity: Students' self-efficacy and meaningful learning in Massive Open Online Course (MOOC) Scale. *Advance in Social Science, Education and Humanities Research*, *115*, 128-133. https://doi.org/10.2991/icems-17.2018.25

Gini, G., Pozzoli, T., & Bussey, K. (2013). Collective moral disengagement: initial validation of a scale for adolescents. *European Journal of Developmental Psychology*, *11*(3), 386-395. https://doi.org/10.1080/17405629.2013.851024

Goh, L. H. (2017). The effectiveness and challenges of MOOC for learning. *Asia Pacific Journal of Contemporary Education and Communication Technology (APJCECT)*, *3*(1), 41–54.

Goto, R., Matsuda, N., Nonaka, M., Hamamoto, Y., Eriguchi, Y., Fujiwara, M., & Kano, Y. (2022). The gilles de la tourette syndrome-quality of life scale (gts-qol): A validation in japanese patients. *Frontiers in Psychiatry*, *12*. https://doi.org/10.3389/fpsyt.2021.797037

Gregory, R. J. (2007). *Psychological testing: History, principles and applications* (5th Ed.). Pearson.

Griffiths, A. (2018). Using exploratory factor analysis and bourdieu's concept *of the illusio to examine inequality in an English school. Power and Education*, *10*(1), 40-57. https://doi.org/10.1177/1757743818756910

Güler, Ç. (2021). Adaptation of the chabot emotional differentiation scale: Turkish version validity and reliability study. Current Issues in *Personality Psychology*, *9*(1), 53-65. https://doi.org/10.5114/cipp.2021.103578

Ha, S., & Stoel, L. (2012). Online apparel retailing: roles of e-shopping quality and experiential e-shopping motives. *Journal of Service Management*, *23*(2), 197-215. https://doi.org/10.1108/09564231211226114

Hasanah, I., Rodi'ah, S., & AFIFAH, L. (2023). Facilities and infrastructures' implications towards teachers' pedagogical content knowledge (pck) welcoming merdeka belajar curriculum. *Journal of Digital Learning and Distance Education*, *1*(8), 319-328. https://doi.org/10.56778/jdlde.v1i8.73

Hinkin, T. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, *1*(1), 104-121.

https://doi.org/10.1177/109442819800100106

Humaisi, M., Thoyib, M., & Alim, N. (2022). Pesantren-based vocational curriculum management in improving the quality of madrasa education in indonesia. *Cendekia Jurnal Kependidikan Dan Kemasyarakatan, 20*(2), 288-300. https://doi.org/10.21154/cendekia.v20i2.5002

Jackson, S., Pretti‐Frontczak, K., Harjusola-Webb, S., Grisham-Brown, J., & Romani, J. (2009). Response to intervention: implications for early childhood professionals. Language Speech and Hearing Services in Schools, *40*(4), 424-434. https://doi.org/10.1044/0161-1461(2009/08-0027)

Kobiah, L. (2021). Piloting a new curriculum: teachers' perspective. *International Journal of Academic Research in Progressive Education and Development, 10*(4). https://doi.org/10.6007/ijarped/v10-i4/11709

Kocoglu-Tanyer, D., DENGİZ, K., & Sacikara, Z. (2020). Development and psychometric properties of the public attitude towards vaccination scale – health belief model. *Journal of Advanced Nursing, 76*(6), 1458-1468. https://doi.org/10.1111/jan.14349

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. educational and psychological measurement. *Educational and Psychological Measurement, 30*(3), 607-610. https://doi.org/10.1177/001316447003000308

Krishnamoorthy, Y., Sarveswaran, G., Sakthivel, M., Kalaiselvy, A., Majella, M., & Lakshminarayanan, S. (2019). Construct validation and reliability assessment of Tamil version of epworth sleepiness scale to evaluate daytime sleepiness among adolescents in rural puducherry, south india. *Journal of Neurosciences in Rural Practice*, *10*(01), 89-93. https://doi.org/10.4103/jnrp.jnrp_168_18

Lepp, G. A., & Fierke, K. K. (2017). Expanding student perspectives in an authentic learning environment. *Transformative Dialogues: Teaching & Learning Journal*, *10*(3), 1–11.

Lindgren, H. (2023). The wasp-ed ai curriculum: a holistic curriculum for artificial intelligence.. https://doi.org/10.21125/inted.2023.1727

Maat, S., Adnan, M., Abdullah, M., Ahmad, C., & Puteh, M. (2015). Confirmatory factor analysis of learning environment instrument among high performance school students. *Creative Education, 06*(06), 640-646. https://doi.org/10.4236/ce.2015.66063

MacKenzie, S. B., Podsakoff, P. M. & Podsakoff. N. P. (2011). Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. *MIS Quarterly, 35*(2), 293-334. https://doi.org/10.2307/23044045

Malhotra, T., Mann, A., Avery, T., & Brett, C. (2019). Exploring the relationship between instructor created online video characteristics and pedagogy. In *EDULEARN19 Proceedings 11th International Conference on Education and New Learning Technologies* (pp. 3190-3198), IATED Academy.

Martin, J. (2022). Martin library leadership survey: development, reliability and validation.

Library Management, 43(3/4), 306-316. https://doi.org/10.1108/lm-11-2021-0100

Miller, L. A., Lovler, R. L., & McIntire, S. A. (2013). *Foundations of psychological testing: a practical approach* (4th ed.). SAGE Publications Inc.

Murray, S. B., Brown, T. A., Blashill, A. J., Compte, E. J., Lavender, J. M., Mitchison, D., Mond, J. M., & Nagata, J. M. (2018). The development and validation of the muscularity-oriented eating test: A novel measure of muscularity-oriented disordered eating. *International Journal of Eating Disorders, 52*(12), 1389-1398.

Park, S. and Choi, M. (2021). Development and validation of the nursing students' rights awareness scale in clinical practice: a scale development study. *Healthcare, 9*(10), 1323. https://doi.org/10.3390/healthcare9101323

Park, S., & Choi, M. (2021). Development and validation of the nursing students' rights awareness scale in clinical practice: a scale development study. *Healthcare, 9*(10), 1323. https://doi.org/10.3390/healthcare9101323

Penuel, W., Fishman, B., Yamaguchi, R., & Gallagher, L. (2007). What makes professional development effective? strategies that foster curriculum implementation. *American Educational Research Journal, 44*(4), 921-958. https://doi.org/10.3102/0002831207308221

Pham, Q., & Tran, T. (2020). The acceptance of e-learning systems and the learning outcome of students at universities in Vietnam. *Knowledge Management & E-Learning an International Journal*, 63-84. https://doi.org/10.34105/j.kmel.2020.12.004

Plake, B. S., & Wise, L. L. (2014). What is the role and importance of the revised AERA, APA, NCME standards for educational and psychological testing? *Educational Measurement: Issues and Practice, 33*(4), 4–12. https://doi.org/10.1111/emip.12045

Rahimi, S., Ebadi, A., Khankeh, H., Eghbali, M., Sharifi, A., & Mohammadian, B. (2023). Validation and psychometric properties of the persian version of the misscare survey. *Nursing Open, 10*(9), 6058-6066. https://doi.org/10.1002/nop2.1827

Rasika, L., Lim F. C., & Haslinda, A. (2019). Strengths and weaknesses of education 4.0 in the higher education institution. *International Journal of Innovative Technology and Exploring Engineering, 9*(2S3), 511-519.

Ried, L. (2011). A model for curricular quality assessment and improvement. *American Journal of Pharmaceutical Education, 75*(10), 196. https://doi.org/10.5688/ajpe7510196

Roslin, R., Bakar, K., & Madar, M. (2023). Teacher competence in the implementation of national preschool curriculum. *International Journal of Academic Research in Progressive Education and Development, 12*(1). https://doi.org/10.6007/ijarped/v12-i1/16387

Rudhumbu, N., & Plessis, E. (2022). The mediating role of lecturer biographic factors on curriculum implementation in universities. *International Review of Education, 68*(1), 11-31. https://doi.org/10.1007/s11159-022-09937-x

Salimi, Y., & Abdollahpour, I. (2018). Developing an adherence in hypertension

questionnaire short version: muah-16—statistical and methodological issues. *Journal of Clinical Hypertension*, *20*(4), 816-816. https://doi.org/10.1111/jch.13250

Shipstone, R., Young, J., Kearney, L., & Thompson, J. (2020). Applying a social exclusion framework to explore the relationship between sudden unexpected deaths in infancy (sudi) and social vulnerability. *Frontiers in Public Health*, *8*. https://doi.org/10.3389/fpubh.2020.563573

Smith, C. R., Cavanagh, J., Sheridan, M., Grosset, K. A., Cullen, B., & Grosset, D. G. (2020). Factor structure of the Montreal Cognitive Assessment in Parkinson disease. *International Journal of Geriatric Psychiatry*, *35*(2), 188-194.

Sundayana, W. (2015). Readiness and competence of senior high school english teachers to implement curriculum 2013. *Indonesian Journal of Applied Linguistics*, *5*(1), 28. https://doi.org/10.17509/ijal.v5i1.828

Suwartono, C., & Bintamur, D. (2019). Validation of the emotion regulation questionnaire (erq): network analysis as an alternative of confirmatory factor analysis (CFA). Anima *Indonesian Psychological Journal*, *34*(3), 115-124. https://doi.org/10.24123/aipj.v34i3.2300

Suyitno, S. and Fujiastuti, A. (2019). Development of excellency-based curriculum: evidences from integrated islamic primary schools in kediri. *Jurnal Prima Edukasia*, *7*(2), 197-205. https://doi.org/10.21831/jpe.v7i2.30323

Tekin, A. and Polat, E. (2016). A scale for e-content preparation skills: development, validity and reliability. *Eurasian Journal of Educational Research*, *16*(62). https://doi.org/10.14689/ejer.2016.62.9

Tekin, A., & Polat, E. (2016). A scale for e-content preparation skills: development, validity and reliability. *Eurasian Journal of Educational Research*, *16*(62). https://doi.org/10.14689/ejer.2016.62.9

Teoh, H., C., & Yap, T. T. (2018). The effects of experiential learning on teaching perception and learning approaches among public relations students. *The Journal of the South East Asia Research Centre for Communication and Humanities*, *10*(1), 79-108.

Watkins, M. (2018). Exploratory factor analysis: a guide to best practice. *Journal of Black Psychology*, *44*(3), 219-246. https://doi.org/10.1177/0095798418771807

Wibaningrum, G. and Aurellya, C. (2020). Fear of missing out scale indonesian version: an internal structure analysis. *Jurnal Pengukuran Psikologi Dan Pendidikan Indonesia*, *9*(2), 75-82. https://doi.org/10.15408/jp3i.v9i2.16283

Windasari, W., Karwanto, K., Supriyanto, S., & Setiani, P. (2022). Factors affecting teacher digital competence: An exploratory factor analysis. *Jurnal Kependidikan Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan Pengajaran Dan Pembelajaran*, *8*(4), 1029. https://doi.org/10.33394/jk.v8i4.6095

Worthington, R., Navarro, R., Savoy, H., & Hampton, D. (2008). Development, reliability, and validity of the measure of sexual identity exploration and commitment (mosiec).

Developmental Psychology, *44*(1), 22-33. https://doi.org/10.1037/0012-1649.44.1.22

Yirci, R., Karakose, T., Uygun, H., & Ozdemir, T. (2016). Turkish adaptation of the mentorship effectiveness scale: a validity and reliability study. *Eurasia Journal of Mathematics Science and Technology Education*, *12*(4). https://doi.org/10.12973/eurasia.2016.1440a

Yu, T., & Richardson, J. (2015). An exploratory factor analysis and reliability analysis of the student online learning readiness (SOLR) instrument. *Online Learning, 19*(5). https://doi.org/10.24059/olj.v19i5.593

Yurtseven, N. (2020). Teacher emotion questionnaire: A turkish adaptation, validity, and reliability study. *Pegem Eğitim Ve Öğretim Dergisi*, *10*(1), 251-282. https://doi.org/10.14527/pegegog.2020.009

Yusof, S., Zainuddin, D., & Hamdan, A. (2017). Teachers' experience in curriculum implementation: an investigation on English language teaching in vocational colleges in malaysia. *Sains Humanika,* 9(4-2). https://doi.org/10.11113/sh.v9n4-2.1359

Zawacki-Richter, O., Bozkurt, A., Alturki. U., & Aldraiweesh, A. (2018). What research says about MOOCs – An explorative content analysis. *The International Review of Research in Open and Distributed Learning, 19*(1), 1-11. https://doi.org/10.19173/irrodl.v19i1.3356

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