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Measuring Meaningful Learning Experience: Confirmatory Factor Analysis

Norliza Ghazali[a*], Mohamed Sahari Nordin[b], [a]Faculty of Educational Studies, Universiti Putra Malaysia, [b]Kulliyyah of Education, International Islamic University Malaysia, Email: [a*]alezg@upm.edu.my

A meaningful learning environment is important in the 21st century educational landscape. Meaningful learning engages students in dynamic instructional activities which can facilitate learning in the 21st century , and thus encourage the growth of holistic human characteristics. However, limited research has explored and measured the factors of meaningful learning. Thus, the purpose of this study is to identify the underlying factors that measure meaningful learning experience among university students in Malaysia. The study conceptualises meaningful learning experience in five dimensions (i.e. cooperative learning, active learning, authentic learning, constructive learning, and intentional learning). Data was collected with a 31-item questionnaire, the reliability of which indexes range from 0.838 to 0.885 in dimensions. The study population consists of University students who willingly volunteered to participate in the research (N=1,524). A sample of 603 respondents was drawn through simple random sampling. Confirmatory Factor Analysis (CFA) was used to analyse the data. The findings of the study indicates that the measurement model for meaningful learning achieved an acceptable level of fit. All statistics provide empirical evidence towards the fact that the meaningful learning measurement model is also psychometrically sound in terms of validity and reliability. The study concludes that there are five underlying factors measuring meaningful learning experiences, identified as cooperative learning, active learning, authentic learning, constructive learning and intentional learning. The study suggests that these factors are aspects of meaningful learning experiences that require development of the 21st century educational landscape which may lead to a more meaningful teaching and learning process. The implication of this study helps students to assess their learning and benefits students with feedback about focus, cooperation and constructive learning methods . In addition, educators are provided with more insightful information on

constructivist instructional strategies as well as institutions for planning professional development programs to fulfil the needs of scholars and enhance the quality of 21st century education.

Key words: *Confirmatory factor analysis (CFA), meaningful learning. cooperative learning, active learning, authentic learning, constructive learning, intentional learning.*

Introduction

Meaningful learning is active, constructive and long-lasting. Most importantly, it allows students to fully engage in the learning process. It involves understanding how learned information fits together. It is opposed to rote learning, which is the memorisation of information based on repetition. Meaningful learning combines several teaching and learning activities that allow students to develop knowledge, reflect on activities, and articulate the information gained by them (Din et al., 2012; Hamdan et al., 2015; Yunianta et al., 2012). It also stimulates students' intellectual curiosity and engages them in dynamic instructional activities, thus encouraging the growth of holistic human characteristics which are in line with the 4.0 industrial revolution (4IR) (Rose Alinda et al., 2017).

Recent research by Koh (2017) proposes a more rigorous evaluation of meaningful learning factors and the development of Likert scale survey items which includes all meaningful learning dimensions. Recommendations were made in lieu of the importance of creating a meaningful learning environment (Ministry of Education Malaysia, 2014; Thomas Tharmabalan, 2016), which could also facilitate learning in the 21st century (Hashim, 2015; Sailin & Mahmor, 2017). There have been a few studies published on best practice in technology use in an online environment to achieve meaningful learning (e.g. Din et al., 2012; Hamdan et al., 2015; Yunianta et., al 2012), but there is limited research to explore and evaluate the factors of meaningful learning (Koh, 2017). The dearth of scholarly literature on the topic suggests that comparable models of educational research into meaningful learning may help align the aim of the 21st educational landscape to develop dynamic instructional activities (Fasihuddin, Skinner & Athauda, 2013; Koh, 2017). Hence, the aim of this study is to identify the underlying factors of meaningful learning experiences among university students in Malaysia. It may provide insightful information to students especially regarding accessing their learning process as well as to educators and institutions planning professional development programs to stimulate more meaningful teaching and learning processes.

Literature Review

Ausubel (1963), a former cognitive psychologist explains that meaningful learning involves students being involved in an active process of meaning-making where they interpret their learning experiences cognitively rather than regurgitate information. Meaningful learning is about how a person learns, the description of an instructional activity and how it should be organised. It occurs within "knowledge construction, not reproduction; conversation, not reception; articulation, not repetition; collaboration, not competition; and reflection, not prescription" (Jonassen et al., 2003). Meaningful learning involves understanding how the information learnt fits together, while rote learning is the memorisation of information based on repetition. Therefore, rote learning is forgotten rapidly whereas meaningful learning is not (Ausubel, 1963; Jonassen, 2002). Recently, several studies have tried to integrate technological advancement into the educational landscape in order to support meaningful learning (e.g. Din, 2010; Hamdan et al., 2015; Koh, 2013, 2017; Yunianta et al., 2012). The meaningful learning framework proposed by Jonassen et al. (1999) and Howland et al. (2012) has five dimensions: (i) cooperative learning, (ii) active learning, (iii) authentic learning, (iv) constructive learning, and (v) intentional learning were adopted as a guide to research. Jonassen (2002) and Howland et al. (2012) state that pedagogical use of technology should allow learners to engage in meaningful learning.

The integration of technology and content resources with e-learning activities can lead to meaningful learning. Previous findings show that all five attributes (cooperative learning, active learning, authentic learning, constructive learning and intentional learning) of meaningful learning can assist academics to increasing the quality of teaching and learning. The analysis and categorization of e-learning activities based on the five dimensions of meaningful learning characteristics were completed by a handful of researchers (e.g. Embi & Hamat, 2014; Hamdan et al., 2015; Yunianta et al., 2012). The design of e-learning activities can be assessed using rubrics with respect to the five dimensions developed by Koh (2013). In addition, , Koh (2017) also carried out some research to measure the design of lesson activities by teachers to determine the strengths and weaknesses of teachers' technological pedagogical content knowledge in terms of the five meaningful learning dimensions proposed by Howland et al. s' (2012) framework. Meaningful learning rubrics were also developed in a study by Din (2010) by referring to the five dimensions of meaningful learning framework proposed by Jonassen et al. (1999). Most of the research developed rubrics for each dimension of meaningful learning yet very limited research has focused on Likert scale survey items which include all meaningful learning dimensions (Koh 2017).

Methodology

Survey Instrument

The underlying dimensions of meaningful learning for the research were adopted from Howland et al.'s (2012) meaningful learning framework which contains five dimensions: (i) cooperative learning (CL), (ii) active learning (AL), (iii) authentic learning (UL), (iv) constructive learning (OL), and (v) intentional learning (IL). A comprehensive explanation of the underlying dimensions of the meaningful learning construct is presented in Table 1.

Table 1: Operational Definition of Five Dimensions of Meaningful Learning

Dimensions	Operational Definitions
Cooperative learning (CL)	Students' willingness to interact with the instructors and collaborate with other learners in the learning process (adapted from Howland et al., 2012; Koh, 2013, 2017).
Active learning (AL)	Students' willingness to participate in learning activities and explore new information throughout the learning process (adapted from Howland et al., 2012; Koh, 2013, 2017).
Authentic learning (UL)	Students' ability to relate what they have learned to daily life experiences and real-world phenomena. This dimension measures students' ability to recognize genuine real-world problems and look for solutions to problems (adapted from Hamdan et al., 2015; Howland et al., 2012; Koh, 2013, 2017).
Constructive learning (OL)	Students' ability to create a new understanding by integrating prior knowledge with new knowledge, articulate what they have learned, and reflect on the learning process (adapted from Embi & Hamat, 2014; Howland et al., 2012; Koh, 2013, 2017).
Intentional learning (IL)	Students' ability to set their own learning goals, regulate learning, identify gaps in understanding and resolve their lack of content understanding discovered in the learning process (adapted from Howland et al., 2012; Koh, 2013, 2017)

Content validity ratio (CVR) is used for measuring the content validity of the meaningful learning factor in this research. The pilot study administered in this research is intended to check whether the items were clear in meaning to respondents and to establish the instrument's construct validity and reliability. The pilot study was administered to two hundred and eighty nine (n = 289) students who volunteered to fill in the questionnaire. Data from the pilot sample was analysed to examine construct validity and reliability of the

instrument. The data collected in the pilot study was subjected to an Exploratory Factor Analysis (EFA) and the findings of the analysis suggest that the measurement instrument achieved acceptable reliability ranging from 0.838 to 0.885 for the relevant dimensions and was used in the actual survey.

Data Collection Method

Data collection for the actual study was conducted in three public Universities in Malaysia (i.e. Universiti Putra Malaysia (UPM), Universiti Sains Islam Malaysia (USIM) and Universiti Teknologi Mara (UTM)). The study population was identified as university students who willingly volunteered to participate (N=1,524). The population was decided as such so that the study could have a clear sampling frame to make simple random sampling possible. The respondents were selected randomly from the sampling frame based on Krejcie and Morgan's (1970) guidelines for choosing a minimum sample size. Subsequently, using a random generation of numbers in SPSS, the researcher selected 50% of students in the sampling frame (n = 1,524 students) as respondents. In total, 762 copies of the questionnaire were distributed .

At the start of the data collection, the researcher gave a short briefing to explain the research, its purpose and how to respond to lecturers and students. Students were given 15 minutes to complete and return the questionnaire as soon as possible . The time was sufficient for them to respond on the spot, thereby minimising the risk of losing the questionnaire. From the 762 copies distributed, some 657 were returned, transforming a response rate of 86.22% to 100% was not possible for two reasons: (1) some students were absent from class on the day the survey was conducted, (2) others appeared to have dropped the course and could not be contacted.

Data Analysis Procedure

The data collected was analysed using Statistical Package for Social Science Program (SPSS) and Analysis of Moment Structures (AMOS). SPSS was used to run descriptive analysis and Exploratory Factor Analysis (EFA) while AMOS was used to run Confirmatory Factor Analysis (CFA) in order to identify the measurement of items for meaningful learning.

Result and Discussion

Respondent Profile

The respondents involved in this study were represented by both genders: male (33.3%) and female (66.7%). The majority of the respondents (94.4%) were Malay students, while the remaining percentage was equally divided among representatives of other races: Chinese

(2.5%), Indian (1.5%), and other (1.6%). In a similar pattern, Muslims formed the biggest religious group in the sample (95.3%), while the remaining percentage was almost equally divided among Buddhists, Hindus and followers of other religions (1.7, 1.5 & 1.5% respectively). The majority were UPM students (46.1%), while the rest were from UITM and USIM with 36.2% and 17.7 % composition, respectively.

Confirmatory factor analysis (CFA)

Confirmatory Factor Analysis (CFA) was used to confirm the measurement model after conducting Exploratory Factor Analysis (EFA) (Hair et al., 2010). The result from the EFA provided the underlying factor that best represents the data, together with their respective measuring items. CFA was carried out to test the goodness of fit of variables measuring the studies . Figure 1 shows the measurement model of meaningful learning experience. After conducting an item-deletion process, two items were dropped and 29 items with 5 factors remained in order to achieve a better fit model.

Figure 1. Measurement Model of Meaningful Learning Experience

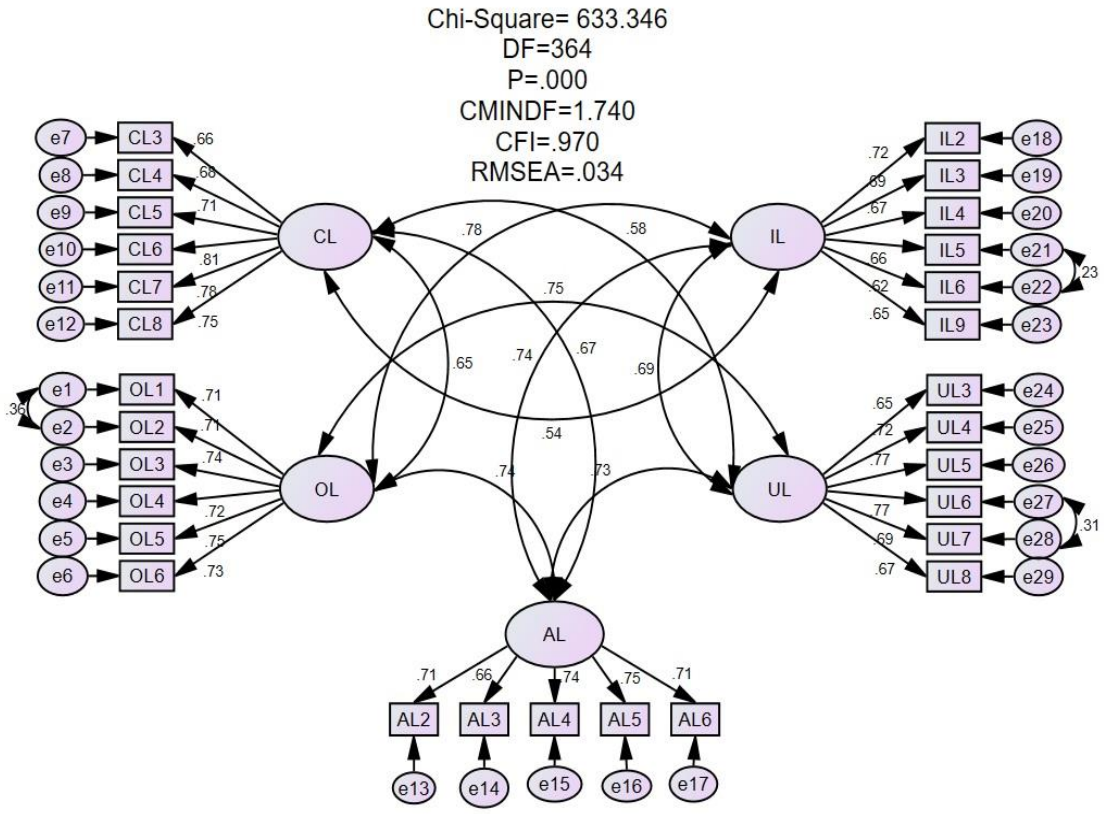

Table 2 presents the fitness indices for the measurement model of meaningful learning experience. Several statistical indices are used to test the model's Goodness-of-Fit (Hair et

al., 2010) and these indices are categorised into absolute fit, incremental fit and parsimonious fit. Absolute fit is assessed based on indexes such as Root Mean Square Error of Approximation (RMSEA), the acceptable cut-off point is less than 0.08. Incremental fit measures Comparative Fit Index (CFI) and the value of this index should be more than 0.90. Parsimonious fit is determined by using the normed Chi square and the cut-off value should be less than 5.0. The result of fitness indices of the model as illustrated in Figure 1 indicate that RMSEA = 0.034, CFI = 0.970 and a normed Chi-square = 1.740. The model meets the goodness-of-fit requirement since values of these indices meet their respective cut-off point requirements.

Table 2: Fit results for measurement model of meaningful learning experience

Parameter	No. of items remaining	RMSEA (< 0.08)	CFI (> 0.90)	Normed Chi-square (< 5.0)	p-value (p > 0.001)
Meaningful leaning	29	0.034	0.970	1.740	0.000

The reliability and validity of the measurement model of meaningful learning developed were performed while conducting CFA. Reliability and validity of the measurement model were assessed through factor loading, Composite Reliability (CR) and Average Variance Explained (AVE) values. According to Awang (2015), a factor loading of 0.6 and above for each item would indicate a high convergent validity. Convergent validity was also assessed through CR and AVE. The required levels of CR and AVE should be equal or more than 0.6 and 0.5 respectively (Hair et al., 2010). CR and AVE were also used to establish the reliability of the measurement model. CR is an alternative measure to Cronbach's Alpha, it is recommended by Chin (1998) as an ideal measure to overcome some deficiencies in Cronbach's alpha. The CR should be 0.60 or higher, while the minimum threshold for an AVE should be 0.5 or higher to indicate adequate reliability (Awang, 2015). The standardised factor loadings, composite reliability (CR) and average variance explained (AVE) values for the final measurement model of meaningful learning are presented in Table 3. As can be seen from the table, the factor loadings for all meaningful learning items were greater than 0.6 with the minimum loading being 0.623 and maximum loading 0.806. With the exception of intentional learning, the AVEs of all four dimensions of the model *(cooperative learning, active learning, authentic learning, and constructive learning)* were greater than 0.5, hence supporting their convergent validity (Hair et al., 2010). According to Fornell and Larcker (1981), an AVE of 0.4 is acceptable when the construct's composite reliability (CR) is greater than 0.7. In this case, the AVE for intentional learning (0.448) was, therefore, acceptable as the CR values for all the dimensions of meaningful learning were greater than 0.7, supporting the claims of convergent validity and reliability.

Discriminant validity was used to measure the extent to which a construct really varies from other constructs. The model's discriminant validity was evidenced by AVE factors, which were higher than the squared shared variance (SV) for all the constructs (Fornell & Larcker, 1981). Discriminant validity was also established by inter-factor correlation values with a cut-off value below 0.85, thus also providing strong evidence for discriminant validity (Awang, 2015; Fang, Zakaria & Shokory 2016).

Table 3: Standardised Factor Loadings, CR and AVE for Meaningful Learning

Dimensions	Items	Factor Loading	P	CR	AVE
Cooperative learning (CL)	CL3	0.658	NA	0.874	0.536
	CL4	0.679	***		
	CL5	0.711	***		
	CL6	0.806	***		
	CL7	0.780	***		
	CL8	0.749	***		
Active learning (AL)	AL2	0.706	NA	0.839	0.510
	AL3	0.657	***		
	AL4	0.740	***		
	AL5	0.754	***		
	AL6	0.710	***		
Authentic learning (UL)	UL3	0.649	NA	0.861	0.508
	UL4	0.720	***		
	UL5	0.769	***		
	UL6	0.770	***		
	UL7	0.694	***		
	UL8	0.667	***		
Constructive learning (OL)	OL1	0.715	NA	0.872	0.531
	OL2	0.714	***		
	OL3	0.737	***		
	OL4	0.718	***		
	OL5	0.753	***		
	OL6	0.735	***		
Intentional learning	IL2	0.721	NA	0.829	0.448
	IL3	0.686	***		

Dimensions	Items	Factor Loading	P	CR	AVE
Cooperative learning (CL)	CL3	0.658	NA	0.874	0.536
	CL4	0.679	***		
	CL5	0.711	***		
	CL6	0.806	***		
	CL7	0.780	***		
	CL8	0.749	***		
(IL)	IL4	0.670	***		
	IL5	0.659	***		
	IL6	0.623	***		
	IL9	0.653	***		

Table 4 illustrates the results for discriminant validity. The factor's AVEs are presented along the diagonal. Inter-factor correlations are located above the diagonal, while the squared inter-factor correlation values (also known as shared variance) are presented below the diagonal. The inter-factor correlation values of the dimensions were below 0.85 with a minimum value of 0.545 and a maximum value of 0.782, hence providing evidence for the model's discriminant validity. However, the model's AVE and SV failed to meet the requirement. According to Hair et al. (2012a) in Henseler, Ringle and Sarstedt (2015), cross loadings are more liberal in terms of indicating discriminant validity (i.e., the assessment of cross loadings will support discriminant validity when the AVE and SV criteria fail to do so). By referring to exploratory factor analysis, all the items measuring meaningful learning loaded highly on the same factor with no cross loadings. Thus, these findings provided evidence for the model's discriminant validity.

Table 4: Discriminant Validity for Meaningful Learning Model

	CL	AL	UL	OL	IL
CL	0.536	0.445	0.339	0.417	0.297
AL	0.667	0.510	0.534	0.541	0.552
UL	0.582	0.731	0.508	0.557	0.471
OL	0.646	0.736	0.746	0.531	0.612
IL	0.545	0.743	0.687	0.782	0.448

Note: CL refers to cooperative learning; AL refers to active learning; UL refers to authentic learning; OL refers to constructive learning; IL refers to intentional learning.

Conclusions

The study findings affirm that meaningful learning experience amongst University students manifests by five underlying factors labelled as cooperative learning, active learning, authentic learning, constructive learning and intentional learning. The findings agree with the evidence found by a number of other researchers, that is meaningful learning is a multidimensional concept--consisting of cooperative learning, active learning, authentic learning, constructive learning and intentional learning (Din, 2010; Hamdan et al., 2015; Howland et al., 2012; Koh, 2013, 2017; Yunianta et al., 2012). The study shows that the meaningful learning model exhibits convergent and discriminant validity as well as acceptable reliability. The resulting model can inform teaching and learning theories and practices, and be used to fill the deficiencies present in instructional models for 21st century learning environments (Fasihuddin, Skinner & Athauda, 2013; Koh, 2017). The five-factor measurement model for meaningful learning has enabled the measurement of students' meaningful learning experience. This model might enable instructors, curriculum and course developers to gain a holistic understanding of factors that promote students' meaningful learning. The information generated from the instrument can be utilised to determine the training needs of students, as well as those of lecturers and instructors. The findings will assist in designing professional development programs or courses in areas where students and instructors need.

The present findings have several limitations . First, the assessment of meaningful learning experience was based on the perspective of three public University students in Malaysia. The generalisation of the study to include all Universities should be done with caution. Future research should replicate similar studies expanded to other universities in Malaysia. Second, the study relies e on only one source of data--the self-reported students' meaningful learning questionnaire. Thus, this limits the scope of the overall results of the data. This is due to a number of factors. First, respondents of self-reported questionnaires may not be completely truthful in their responses, may lack the self-awareness to answer the questionnaire items correctly, or may not understand the importance of the study. Therefore, the data collected cannot be guaranteed to very accurate. Document analysis and other forms of quantitative or qualitative methods such as interviews and observations could have provided richer data. Third, the present study was conducted on a cross-sectional research design which has the limitation of causality. Future research should adopt a longitudinal research design to overcome the problem of causality.

It can be concluded that the proposed model supports students' meaningful learning exploration in this research. Hence, the research findings in totality have a great deal of significance especially for students of higher learning institutions in Malaysia as well as for instructors and university administrators. Students' meaningful learning is an important issue

that must be further discussed and examined in order to facilitate the 21st century education landscape.

REFERENCES

Ausubel, D. G. (1963). Cognitive structure and the facilitation of meaningful verbal learning. *Journal of teacher education, 14*(2), 217-222.

Awang, Z. (2015). SEM made simple: A gentle approach to learning structural equation modelling. Bandar Baru Bangi, MPWS Rich Resources.

Chin W.W. (1998). Issues and opinion on structural equation modelling. MIS Quarterly, 22 (1), 7-16.

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.

Din, R. (2010). Development and validation of an integrated meaningful hybrid e-training (I-Met) for computer science: Theoretical empirical based design and development approach. (Doctoral Dissertation, Universiti Kebangsaan Malaysia). Retrieved from https://rosseni.files.wordpress.com/2010/03/myphd.pdf

Embi, M. A. & Hamat, A. (2014). Meaningful blended learning via iFolio@UKM. In M. A. Embi (Ed). *Blended & Flipped Learning: Case Studies in Malaysian HEIs* (pp. 59-80). Bangi: Universiti Kebangsaan Malaysia.

Fasihuddin, H. A., Skinner, G. D., & Athauda, R. I. (2013). Boosting the opportunities of open learning (MOOCs) through learning theories. *GSTF Journal on Computing, 3*(3), 112–117.

Fornell, C., & Larker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18,* 39-50.

Fang, J. T. Y., Zakaria, T., & Shokory, S. M. (2016). The Relationship between the Best Practices of Transformational Leadership and Quality of Good Teachers. International Journal of Economics, Business and Management Studies, 2(3), 98-104.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper saddle River, New Jersey: Pearson Education International.

Hamdan, A., Din, R., Abdul Manaf, S. Z., Mat Salleh, N. S., Kamsin, I. F., & Ismail, N. M. (2015). Exploring the relationship between frequency use of web 2.0 and meaningful learning attributes. *Journal of Technical Education and Training, 7*(1), 50–66.

Hamdan, A., Din, R., Manaf, S. Z. A., Saleh, N. S. M., Kamsin, I. F. K., Khalid, R. A., Ismail, N. M., Shah, P. M., & Karim, A. A. (2015). Personalized learning environment: Integration of web technology 2.0 in achieving meaningful learning. *Journal of Personalized Learning*, *1*(1), 13-26.

Hashim, Y. (2015). 21 Century Education : Are we heading towards the right direction of improving teaching and learning as needed by educational transformation programme? 8th International Malaysian Educational Technology Convention 2014. Retrieved from https://www.researchgate.net/publication/283323228_21_Century_Education_Are_we_heading_towards_the_right_direction_of_improving_teaching_and_learning_as_needed_by_educational_transformation_programme

Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135.

Howland, J. L., Jonassen, D. H., & Marra, R. M. (2012). Meaningful learning with technology. (4th ed.). Boston, MA: Allyn & Bacon.

Jonassen, D. H. (2002). Engaging and supporting problem solving in online learning. *Quarterly Review of Distance Education*, 3(1), 1-13.

Jonassen, D. H., Peck, K. L. & Wilson B. G. (1999). *Learning with technology: A constructivist perspective*. NJ: Merrill Prentice Hall.

Krejcie, R. & Morgan, D. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.

Koh, J. H. L. (2017). Designing and integrating reusable learning objects for meaningful learning: Cases from a graduate programme. *Australasian Journal of Educational Technology*, *33*(5), 136–151.

Koh, J. H. L. (2013). A rubric for assessing teachers' lesson activities with respect to TPACK for meaningful learning with ICT. *Australasian Journal of Educational Technology*, *29*(6), 887-900.

Ministry of Education Malaysia. (2014). Asia-Europe Meeting of Ministers of Education (ASEMME) International Seminar on Life Long Learning Final Report, 1–41. 25th-26th August 2014. Retrieved from http://asemlllhub.org/fileadmin/www.asem.au.dk/events/LLL_Seminar__Kuala_Lumpur__2014/ASEM_CONFERENCE_2014_8102014__Laporan_Akhir__2_.pdf

Rose Alinda, A., Syed Norris, H., Marlia, P., & Siti Hamisah, T. (2017). Redesign Higher Education Towards Industry 4.0, Kuala Lumpur, Malaysia. 23 – 24 August 2017. Retrieved from https://www.scribd.com/document/367933437/Higher-Education-4-0-Current-Status-and-Readiness-in-Meeting-the-Fourth-Industrial-Revolution-Challenges-1

Sailin, S. N., & Mahmor, N. A. (2017). *Promoting meaningful learning through create-share-collaborate.* Paper presented at the International Seminar on Generating Knowledge Through Research, UUM-UMSIDA, 25-27 October 2016. https://doi.org/10.21070/picecrs.v1i1.502

Thomas Tharmabalan, R. (2016). *Learning without Boundaries MOOCs in Malaysia.* Retrieved from https://doi.org/10.4018/978-1-5225-0466-5.ch010

Yunianta, A., Yusof, N., Othman, M. S., & Octaviani, D. (2012). Analysis and categorization of e-learning activities based on meaningful learning characteristics. *International Journal of Social, Behavioural, Educational, Economic, Business and Industrial Engineering*, *6*(9), 2430–2435.