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Experiential Learning and Self-Motivation Factors for Engaging in E-Learning

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Abstract

The education system has shifted on from hybrid learning to 100% e-classroom or online learning (e-learning) because of the Movement Control Order (MCO) by cause of COVID-19, that caused major interference to teaching and learning. Experiential learning and self-motivation are principles of learning developed from constructivism theory which applies to associating and engaging in e-learning. The challenge of e-learning is the lack of student skills to be actively involved in e-learning which increases student motivation during the teaching and learning. However, many researchers' tendency on learning the stated engagement, perceived satisfaction, and feedback of students. fundamentals but lack off method on the teaching such as engagement during e-learning. The objective of this research is to investigate the connection between the two principles of online learning which are experiential learning and motivation toward engagement in e-learning. 421 students from local Higher Education Institutions (HEIs) have been participated in the study. A pilot and screening test was done before the actual survey deliver. Using Smart PLS analysis, this study obtained significant findings on experiential learning and self-motivation. The obtained R^2 value of 0.563 indicated that two variables, which are experiential learning and self-motivation, represented 56% of the variance in engagement. The AVE result on experiential learning obtained 0.698, while self-motivation was 0.744. Based on the results, all structures have reached the satisfactory level of AVE result of >0.5 . For further study, it is suggested to elaborate on other principles.

Keywords: Experiential Learning, Self-Motivation, Engagement, E-Learning.

Introduction

The use of Internet offers the optimal solutions to provide great facility in online classrooms. The Internet helps learners acquire knowledge of the dynamic resource that can come from social media or any educational web site. One of educational web provided by HEIs is e-learning. There are two main approaches to e-learning: synchronous and asynchronous. The first approach is synchronous learning where learners acquire knowledge on-line such as discussion in small group and livestream. The second one, asynchronous learning, enables learners to learn and collaborate on their own pace. In 2020, there were changes in e-learning due to the control movement order (CMO) by the Malaysian government due to the COVID-19 disease. Hence, HEIs were forced to switch from 20 percent classrooms and 80 percent e-

learning to the 100 percent e-learning. However, Malaysia seemed prepared for the lockdown because e-learning has been considered a compliment to physical classrooms.

University members, including students, faced the expeditious transition of teaching and learning including medium, interactions channels, and delivery method. It was time to adopt an online learning environment. E-learning keeps all data in air-cloud, and students can use compatible devices to reach it anytime, anywhere. The challenge of e-learning is the student engagement during teaching and learning. Interaction is one form of engagement. Engagement is a continuum. Therefore, it can happen anytime, a student can be variously and differently engaged as a work response, context, time, instructor, and peers. Live teaching is lacking in communication and interaction because of one way communication; but also have several advantages, such as a student could play off-line with the ability to search, take a break, go back, or even replay the lecture as much as necessary. This deficiency can improve by providing interactive learning activities such as gamification learning. Gamification learning have several components which compliment students hunger in their creativity. Gamification learning involved learners and educators. Therefore, learning becomes fun and install in long term memory. Research shows that, activities with emotion will be permanently in mind.

This study investigated on two factors that influence engagement. The factors are experiential learning and self-motivation. Researchers point out that the pandemic has created a unique opportunity for education changes that have been proposed before COVID-19 but were never fully realized (Zhao & Waterston, 2021; Ewing & Cooper, 2021). These two factors are critical to implement in the learning activities in order to fill the gap from previous research by researchers:

Three big changes were identified that shall be implemented in the education system post-COVID: a curriculum that is developmental, personalized, and evolving; pedagogy that is student-centered, inquiry-based, authentic, and purposeful; and delivery of instruction that capitalizes on the strengths of both synchronous and asynchronous learning. Many researchers focused on learning dispositions, such as the reported engagement, perceived satisfaction, and student feedback elements (Rajabalee & Santally, 2021)

Literature Review

There are two components of engagement by (Malcom, 2019). The first is to provide facilities. The second is the amount of time and learners' effort. Engagement in this research is the second component. One of the crucial components which has an impact on the quality of online education is to ensure that learners are productively and competently engaged in the educational process (Robinson & Hullinger, 2008; Sinclair et al., 2017). Effort the learners make to maintain their position for given time to stay engaged in the learning process to construct knowledge and build his or her critical thinking are known as learner engagement (Dixson, 2015). So, that is the same meaning in the first principle in constructivism by George Hein which is learning is an active process. Learners who active gain more experience. So that, the first factor engagement is experiential learning. Based on constructivism by George Hein, experiential learning fall under a principle called "Actively Construct Knowledge Based on Current or Past Knowledge". Experiential learning means an active learning experience (Shuell, 1996) through searching for information. The information becomes knowledge. Students enrich their knowledge by being actively involved in the process of teaching and learning. Students actively build up the experiential world. An active and interactive educator

helps infuse learners and knowledge creation. Real-world and practice-based experiences in workplaces are considered drives for relevant teaching and learning. People will find the knowledge they need to fulfill a task that is important to them. Principles of learning by George Hein align with constructivism. Constructivism believes that truly effective learning should be generated by the interaction between learners' cognitive structure and the outside environment (Zhao & Shi, 2018). During the process of teaching and learning, people learn to learn as they learn. The learner is the cognitive subject and develops their knowledge from their experience. The learner also learns from group sharing. During pandemic, educators and learners were compelled to work around the technical difficulties by using other online platforms (Mahyoob, 2020). Simulation-based experiential learning may provide valuable and genuine student-centered activities, boosting student engagement and encouraging deeper learning (Mattar, 2018). The challenge of online learning is the lack of student experiences such as digital literacy, conceptual comprehension, technical challenges, and accessibility. These obstacles typically reduce learning motivation and learning effectiveness (Rajabalee & Santally, 2021).

The benefit for students active in learning is attracting student focus, developing long-term memory, fast learning, and increasing student motivation (Intan & Rukayah, 2020). It is also relating to how personally motivated a student feels to engage with the course material, instructors, and classmates, in that order (Czerkawski & Lyman, 2016). Lauria et al (2012) supported that the quantity of submitted assignments, forums postings, group project and completion of online quizzes can all be used to gauge how frequently students participate in MOOCs. Those activities involve learner engagement that require online or platform presence (Anderson et al., 2014). Lee et al (2021) reported that indicators of learner engagement, such as psychological motivation, peer cooperation, cognitive problem solving, and communication with tutors and peers, can help to student enhance engagement and ultimately assist tutors in effective curriculum design. Interaction is one form of engagement where student can be variously and differently engaged as a response to the work, the context, the time of day, the teacher, and peers. In e-learning context, infrastructure is important to provide engagement during online learning. This research study two factors for Engaging in e-Learning; first is experiential learning and second is self-motivation.

The second principle is self-motivation. Constructivism principles support technology in distance learning. A constructivist environment helps learners to be self-driven, independent, communicative, and cooperative in their learning experiences (Mattar, 2018). Educators should guide students to change their ways of learning and increase learning motivation to a larger extent to implement teachers' new teaching and learning model. Students' engagement, motivation, and interaction are key factors to attain a successful learning process. Positivism paradigm was aligned with a deductive literature review to form hypothesis: H1: Experiential learning has a direct positive effect on engagement and H2: Self-motivation has a direct positive effect on engagement.

Research Methodology

Online learning environment is one of the methods to support traditional teaching and learning because of campus closure. Due to the pandemic, this study was performed using online-based surveys on Malaysian students. Surveyors preferred this method as it enable rapid survey development and administration, smooth and quick data collection and data analysis, usually low cost, and fewer errors than telephone or mailed questionnaires due to manual data entry (Alsoud & Harasis, 2021). This study relied on collecting the required data

by conducting an online-based survey study between February to April 2021. A “Google forms” questionnaire link was sent to students’ through social media channels, student groups and forums, and e-mail. University faculty members also helped in sharing and encouraging the students to answer the questionnaire. To understand the distribution of study participants, descriptive statistics were carried out. Descriptive statistics was used because large amounts of data that needs to be organised, interpreted, and summarised. Simple percentage distribution was estimated to define the characteristics of the participants, their field of study, and their faculty. The Statistical Package for Social Science (SPSS Version: 25) was for data analysis and smart pls for developing a model. The research involved a literature review through proses searching, data extraction, synthesising studies, and writing the review.

Pilot Test

A pilot study was conducted for the newly-developed questionnaire by involving a small group with the same characteristics as the respondents in the actual study. Several comments were received and acted upon for improvement. Cronbach’s alpha was used to measure the construct consistently. The result of reliability analysis for ten variables was 0.880. This reliability coefficient was considered high and acceptable. Therefore, the questionnaire was considered acceptable to be used to collect data from the actual study to gauge the engagement of students toward e-learning. This research was from a single source so that common method biases were checked. The result of common method biases for this research was below 0.9, meaning there was no bias in answering the questions.

Participants

The population in this research was the students of higher education in Malaysia. This study was homogeneous in terms of the study of the variables was not an in-depth, thus a small sample size was adequate to represent the characteristics of the population (Fah & Hoon, 2016). Total participants after screening were 421 from 432 participants. It was enough for choosing an effect size medium table from Green (1991) for nine principles needed 113 respondents. The sampling technique used probability sampling which allowed every member to have equal opportunities to be a part of various samples. The cluster sampling method was suitable for this research. This research was grouped by field of study. Among them, the courses offered in colleges and universities covered 12 disciplines, including science, engineering, agriculture, medicine, economics, management, law, literature, history, philosophy, business, social sciences, electrical, finance, education, computer science, IT, language, accounting, and art. Findings show almost similar results from the students in business, counseling, and engineering courses. This is follow by social sciences, language, and computer science. Fewer students from science, arts, and others. Table 1 shows the profile of the students who participated in this study. The average class size majority is 16-40 students (72.5%). Below 25 years old consisted mostly of undergraduate students. The researcher chooses an age over 18 that is after secondary school. As for gender, female students outnumbered male students with a percentage of 67.1% and 33.1% respectively. Institutions involved were public and private universities/colleges/schools with almost 70% from public universities. One-half were degree and postgraduate students with a percentage 48.8% and 5.3%.

Table 1

Study participants' demographic

Features and Characteristics		Percentage (%)
Gender	Male	33
	Female	67
Student Age	Below 20 years old	45
	21-25 years old	49
	Over 26	6
Nationality	Malaysia	96
	Non-Malaysian	4

Result and Discussion

Researchers adapted questions from the existing surveys, with some modifications to address the criteria needed in the study. E-learning is beneficial for the acquisition of knowledge and innovation among students. Students lacked the experience and confidence to learn online using a new medium. After some time, most learners could overcome most of the technical issues related to online learning platforms. The outcome of experience becomes action and emotion. Good experience gives the best emotion and will give high motivation. The general definition of experiential learning comes from individual and group learning. For this research, the result was more focused on interaction with others. P4EL3 items in experiential learning construct was individual aspect, so experiential learning for this item did not achieve the target of engagement meaning. So, P4EL3 must be deleted because of the low value of 0.198 which was less than the accepted value 0.5 and above. When the pattern of questions in experiential learning construct was reviewed, it was found that the meaning of engagement in online learning is to interact with people, not only done individually.

The next construct is self-motivation. The evaluation of student motivations for online learning can be challenging because of the lack of face-to-face contact between learners and educators. The current research shows that multimedia-assisted teaching has an active impression on study motivation. Three indicators were found to form the self-motivation construct. Finally, is the dependent variable called engagement. Twelve items were used to determine the level of students' engagement. The respondents had a positive attitude towards online learning. They perceived that the combination of both traditional and online methods improved their educational outcomes because they had a better engagement in the subject course. Similar results were gathered by Ostown and York (2012); Imlawi (2013); Sanders's, (2012) in the research they conducted mentioning that online learning encouraged student engagement. Imlawi (2013) proposed an engagement model that engage students in online learning thus improving their educational outcomes. The majority of students "strongly agreed" and "agreed" that they had better engagement using social networks that influenced their learning, especially when delivered in a blended format.

Measurement Model

Partial least square (PLS) modeling was done using the SMART PLS 3.2.8 version (Ringle et al., 2015) as the statistical tool to investigate and explain the hypothesized relationships among the variables in the research model (Hair et al., 2017; Petter & Hadavi 2021). Figure 1 shows standardised beta values for experiential learning is 0.354 and Self-Motivator is 0.551. The range for standardised beta values is 0 to 1. Closer to 1 means a strong relationship between

two variables. For the measurement model to test convergent validity, assessments were done on the loadings, average variance extracted (AVE), and composite reliability (CR).

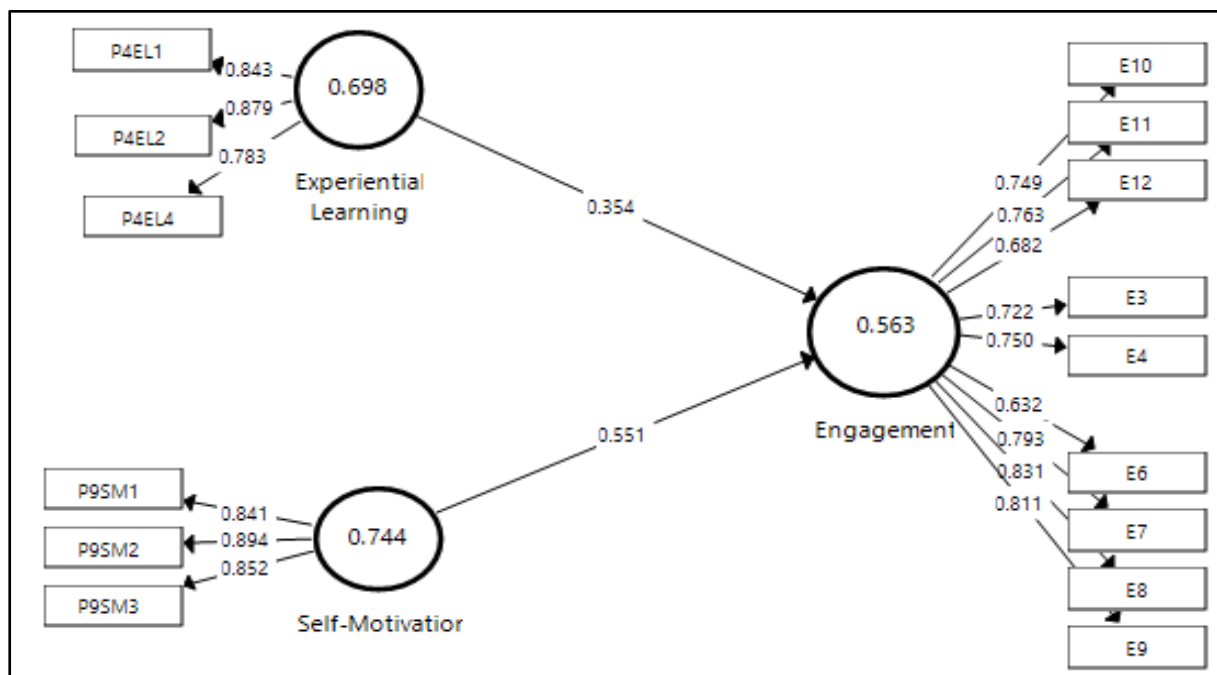


Figure 1. Measurement Model

Table 2 shows the values of loadings should be ≥ 0.5 , the AVE should be ≥ 0.5 and the CR should be ≥ 0.7 (Hair et al., 2010). As shown in Table 3, the AVEs are all higher than 0.5 and the CRs are all higher than 0.7. The loadings were also acceptable with only one or two loadings less than 0.708 (Hair et al., 2019). To achieve adequate convergent validity, each construct should account for at least 50% of the assigned indicators' variance (AVE ≥ 0.50) (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Hair et al., 2017). AVE is to assess whether the measurement is valid. Composite reliability is to measure reliability. Based on the result, all the constructs have met the satisfactory level of AVE result of >0.5 . In addition, all the constructs of exogenous also met the satisfactory level of Composite Reliability (CR) result of >0.8 . The acceptable values for Composite Reliability are >0.7 , loadings ($>0.5-0.708$). Thus, the model showed that convergent validity was achieved.

Table 2

Result of measurement model

Construct	Items	Loadings	AVE ^b	CR ^a
Engagement	E10	0.749	0.563	0.920
	E11	0.763		
	E12	0.682		
	E3	0.722		
	E4	0.750		
	E6	0.632		
	E7	0.793		
	E8	0.831		
	E9	0.811		
Experiential	P4EL1	0.843	0.698	0.874
Learning	P4EL2	0.879		
	P4EL4	0.783		
Self-Motivation	P9SM1	0.841	0.744	0.897
	P9SM2	0.894		
	P9SM3	0.852		

Note: Engagement (E1, E2, E5), and Experiential Learning (P4EL3) were deleted due to low loadings

a Composite reliability (CR) = (square of the summation of the factor loadings)/{(square of the summation of the factor loadings) + (square of the summation of the error variances)}

b Average variance extracted (AVE) = (summation of the square of the factor loadings)/{(summation of the square of the factor loadings) + (summation of the error variances)}

We assessed the discriminant validity using the HTMT criterion suggested by Henseler et al (2015) and updated by (Franke and Sarstedt, 2019). The HTMT values should be ≤ 0.85 the stricter criterion and the more lenient criterion should be ≤ 0.90 and does not contain a 1. As shown in Table 3, the values of HTMT were all lower than the stricter criterion of ≤ 0.85 as such we can conclude that the respondents understood that the 9 constructs are distinct. There were no cross loadings among the measurement items. Taken together both these validity test has shown that the measurement items are both valid and reliable. Discriminant validity is to check the importance of the variables, and whether researcher had the same opinion as the participants. This table compare the construct is distinct means the respondent understand HTMT < 1 is accepted. After analysis on discriminant validity and HTMT, it can be concluded that no issues were present with discriminant validity.

Table 3

Discriminant Validity using Fornell and Lacker Criterion (1981)

	Engagement	Experiential Learning	Self-Motivation
Engagement	0.75		
Experiential Learning	0.694	0.726	
Self-Motivation	0.765	0.621	0.863

HTMT

	Engagement	Experiential Learning	Self-Motivation
Engagement			
Experiential Learning	0.876		
Self-Motivation	0.882	0.841	

Assessment of Structural Model

The structural model assesment mainly involved inspecting collinearity, path coefficients, coefficient of determination, effect size, and predictive relevance. The collinearity test showed that the variance inflation factor (VIF) values for experiential learning and self motivation were 1.584 which were below recommended threshold value of 5.0 (Hair et al., 2017). Hence, there was no issue of collinearity in the model.

To answer the hypothesis, we need to run bootstrapping of 5,000 resamples. As control variables, experiential learning ($\beta=0.354$, $p>0.05$) and self-motivation ($\beta=0.551$, $p>0.05$) were found significantly related to engagement. Therefore H1: Experiential Learning has a positive effect on engagement is accepted and H2: Self-Motivation has a positive effect on engagement is acceptance were supported. Cohen 1988 mention R^2 above 26% is condiseder large means that R^2 for engagement was large. Thereafter, we computed the effect size (f^2) to measure the practical significance of the relationships. According to Cohen’s (1988) guidelines, the f^2 values of 0.35, 0.15, and 0.02 represent large, medium, and small effect size respectively. The result discovered experiential learning had a medium effect on engagement while self-motivation had a large effect towards engagement.

Table 4

Path coefficients of direct effects

Hypothesi s	Relationshi p	Std Beta	Std Error	t- values	p- value	BCI LL	BCI UL	f^2	VIF
H1	Experiential Learning -> Engagemen t	0.354	0.045	7.85	$p<.001$	0.277	0.427	0.236 (mediu m)	1.584
H2	Self-Motivation -> Engagemen t	0.551	0.045	12.148	$P<.001$	0.474	0.625	0.573 (large)	1.584

F2= small : 0.02, medium: 0.15, large: 0.35

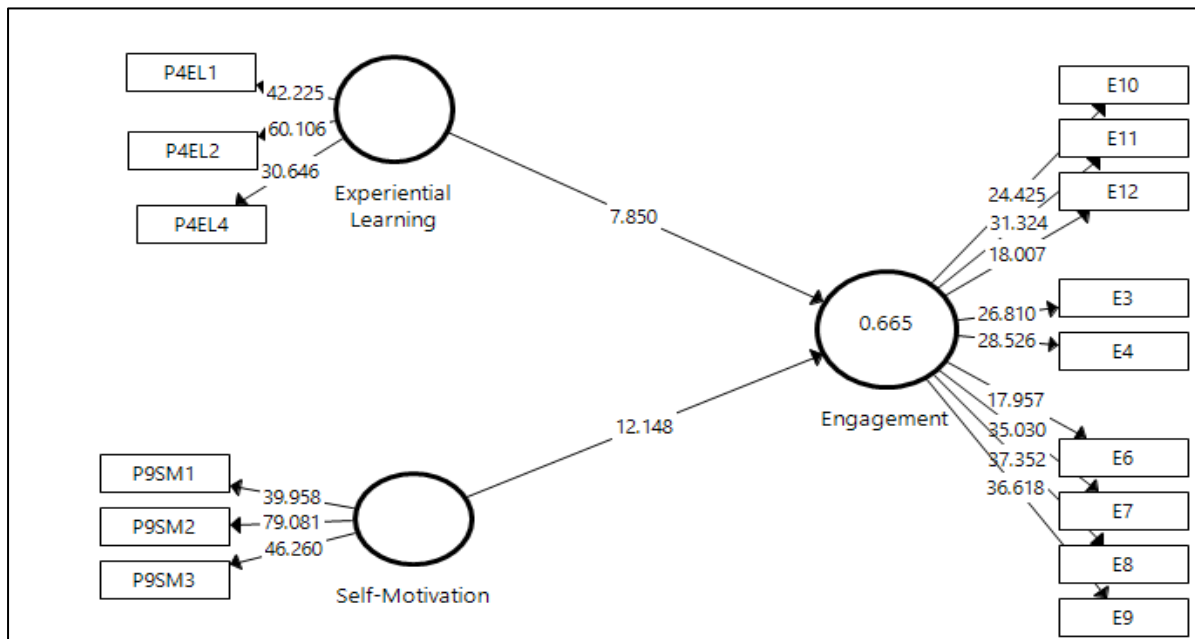


Figure 2. Structural Model

Conclusion

The findings of this study suggest that self-motivation give a big impact on engagement. Self-motivation can increase by adding the elements of gamification in education such as points, badges, and a leaderboard. Awards, acknowledgments, levels, and feedback are also persistent (Rughinis, 2013). Interestingly this research supports study by Evans et al (2015), experiential learning towards engagement happened when interactions in discussion forums, course projects, and meaningful choices of learning activities allow them to deal with the real world. Research from Sheri et al (2016), demonstrated that students were able to implement knowledge to real world. As we know experiential learning possibly can get from self-learning such as course materials and instructions but in the context of engagement e-learning, the most important part is doing activities in a group. The reason to do the hypothesis on two factors was to check whether these two factors can influence engagement and not. As a result, this self-motivation was given greater emphasis compared to experiential learning. Cantor (1997) indicated that experiential education involves learning activities in which the student is directly engaged in the phenomena being studied. This study contributes to the engagement improvement in online learning. The role of experiential learning and self-motivation was found to be significant, which helps students actively engage in the online learning environment. Therefore, universities indeed have adopted e-learning as a new way of teaching that can be supportive of the teaching and learning process post-COVID-19. The study reveals students' preferences for e-learning as it provides them much freedom to connect with their teachers, and fellow students and engage with their study materials in the comfort and flexibility of space and time. The results of the study have implications for online instructors, instructional designers, and administrators who wish to enhance engagement in online courses.

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