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**THE EFFECT OF ONLINE STUDENT ENGAGEMENT ON
UNIVERSITY STUDENTS' ENTREPRENEURIAL INTENTION**

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Abstract

Many higher education institutions (HEIs) are now using online learning instead of conventional classroom instruction because to the widespread of COVID-19 pandemic. Entrepreneurship course which emphasizes on both theoretical and practical perspectives has shifted to online learning mode as well. Due to the changed in its delivery method, the relationship between online learning engagement and entrepreneurship education outcomes remained unknown. Therefore, this study was geared towards determining the effects of student engagement in online learning on entrepreneurial intention. A research model was developed by using Online Student Engagement (OSE) model. Quantitative survey method was employed, in which 290 students registered for entrepreneurship course in a university was surveyed through questionnaire. Statistical analyses such as descriptive, Pearson correlation and multiple regressions analyses were performed. The results revealed that one element of OSE, namely emotion was a significant factor in influencing entrepreneurial intention. Whereas the other two elements namely skills and participation did not play a significant role in affecting entrepreneurial intention. It could be concluded that online entrepreneurship course which was conducted without sufficient learning skills and interactions could not develop sufficient entrepreneurial interest. Literally, this study suggested that OSE is a concept which is worth further investigation in entrepreneurship education research. Practically, it recommended that HEIs should support students with technology to enhance its learner's skills and encourage greater interactions to develop greater interest in entrepreneurship among students who learned through online platform.

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1. Introduction

The COVID-19 epidemic struck hard all around the planet since 2020. A lot of countries are still in the recovery stage two years after that. Since the COVID-19 virus could be easily spread through droplets, many new normal practices were introduced to prevent contacts between humans. For instance, wearing face mask, practicing social distancing, staying at home, avoiding crowded places, just to name a few. The adoption of those new norms has drastically changed people's daily life. As a preventive measure, Malaysian government has implemented "Movement Control Order" (MCO) from 18 March 2020 to 3 May 2020. Later on, "Conditional Movement Control Order" (CMCO) and "Recovery Movement Control Order" (RMCO) and "National Recovery Plan" (NRP) were implemented in the country until 2021.

During the period of MCO, CMCO and RMCO and NRP, higher education institutions (HEIs) such as poly-techniques, colleges and universities were forced to shift from traditional classroom approach to advanced online approach (Li & Lalani, 2020). Such a shift happened overnight, and the change was rather radical. Many courses were forced to be redesigned to fit into the online mode. Although application of online learning is not something new because it is a trend in Education 4.0 (Future Ready Education, 2019), HEIs need to ensure that students can cope with this flexible way of learning and can succeed in online programs. In order to ensure that students could learn well and do well in their online courses, HEIs need to pay attention to issues pertaining to online student engagement (OSE).

Student involvement is now regarded to be a relatively new idea in the context of online learning, and studies relevant to this topic are limited. It is undeniable that there are many challenges in assessing student engagement in higher education because of the complexity of measurements, approaches, and assessment levels (Mandernach, 2015). Redmond et al. (2018) mentioned that student engagement in online learning mode requires further investigation because universities have increased their online studies opportunities. As Meyer (2014) pointed out, student engagement should not be used as a final outcome; its effect on student learning should be studied. Furthermore, the relationship between student engagement and other variable such as academic achievement is worth further scrutiny (Kucuk & Richardson, 2019). In addition, Whitney et al. (2019) also mentioned that most research concentrated on macro-engagement, whereas just a few studies examined a particular course or topic area. Therefore, effects of OSE on the academic achievement of a specific course require further examination.

In most HEIs, entrepreneurship is a common course which is offered to all students either as a core or elective course. Typically, entrepreneurship course is delivered through traditional methods such as face-to-face lecture, seminar with successful entrepreneurs and actual hands-on entrepreneurial practices. These methods allow students to gain entrepreneurial experience directly. As Mavrina and Mingaleva (2017) mentioned, entrepreneurial learning should cover both theoretical knowledge about entrepreneurship and practical skills for carrying out entrepreneurial activities. However, the delivery methods have changed to solely online mode because of COVID-19 outbreak. Due to the change in delivery method, effects of online entrepreneurship courses on learner's motivation or intention in becoming entrepreneurs remain unknown. Specifically, question such as "would students' engagement in online entrepreneurship course influence their entrepreneurial intention?" remained unanswered. Therefore, the objective of this paper was to determine the influence of online learning student engagement on entrepreneurial intention.

2. Literature Review

2.1. Online student engagement (OSE)

Although there is a lack of good definition of student engagement (Dixson, 2015), Kuh (2003) explained it as “the time and energy students devote to educationally sound activities inside and outside of the classroom (p. 25)”. National Survey of Student Engagement (NSSE) (2020) delineated that student engagement consists of two critical characteristics, they are (i) time and effort students devote to their academic work and other academic activities and (ii) ways resources in institutions are deployed and curriculum and learning opportunities are organized to get participation from students. Student engagement is crucial because it helps to improve collegiate quality and student success (NSSE, 2020). Furthermore, it plays an important role in learning process because it affects learning outcomes (Kucuk & Richardson, 2019) and ensure successful achievement of learning outcomes in higher education (Collaço, 2017).

Over the years, many studies have been conducted on student engagement. However, not many researches have studied student engagement in online learning. Furthermore, there remain many challenges for higher education providers to effectively assess student engagement either at institutional or course level (Mandernach, 2015). Education world is entering a new era called Education 4.0 which emphasizes on Internet technology and online applications integration into the teaching and learning process. True, Education 4.0 accelerates remote and personalized learning, and changes learning methods and assessment patterns (Future Ready Education, 2019). In addition, the COVID-19 pandemic has also drastically changed the educational methods from traditional classroom to online platform. As an example, Tencent classroom was extensively used in China after Chinese government instructed their full-time students to learn through online platform during the strike of COVID-19 pandemic (Li & Lalani, 2020). Studying online requires adjustments from traditional teaching and learning practices (Redmond et al., 2018). The way of learning through online platform is very much different from traditional face-to-face method because students are not able to interact personally with their teachers and classmates (Briggs, 2015). In addition, keeping students engaged in technology-mediated learning is important (Henrie, 2016). As such, it is viable to scrutinize further on online student engagement (OSE).

In particular, Dixson (2015) has established a model and a set of measurement for OSE. Dixson’s model was developed based on the combination of several traditional classroom engagement models such as social constructivist theories and Community of Inquiry (CoI) model. The model delineated OSE as students becoming emotionally involved in learning through time and energy that they exerted in learning certain materials and skills, and interaction with others in class. There are four components in Dixson’s model, namely skills, participation, emotion and performance. Dixson (2015) has further validated a set of scale for determining level of student’s engagement in online learning setting. Redmond et al. (2018) also developed a multi-dimensional conceptual framework for online engagement for tertiary education. There are five inter-related elements in the framework, namely social engagement, cognitive engagement, behavioral engagement, collaborative engagement and emotional engagement. The two models are considered equally good for studying student engagement in online learning; however, this study adopted Dixson’s model because it has validated measurements.

Previous studies have successfully pointed out that online learning engagement was related to learning performance and achievement. For instance, Bolliger and Halupa (2018) found a moderate correlation between student engagement and student outcome. Indeed, student engagement in online module was found to have significant correlation with student performance, in which good performers recorded higher engagement level than low performers (Rajabalee et al., 2020). Previous research also revealed that elements of OSE such as behavioral, emotional and cognitive engagement significantly affected student satisfaction (Kucuk & Richardson, 2019). In addition, Rodgers (2008) found that greater online interaction, in which one extra hour of e-learning participation increased approximately one percent of student's module marks. Online interpersonal interaction between instructor and students, such as active in posting and quick in responding is important in affecting students' performance (Jaggars & Xu, 2013). Interestingly, Gray and DiLoreto (2016) found that when learning through online platform, student engagement partially mediated the relationship between instructor presence and student satisfaction, as well as between learner interaction and perceived student learning. Since student engagement has positive relationship with performance, it is viable to scrutinize how student engagement affect entrepreneurial intention.

2.2. Entrepreneurial intention

Intention could be regarded as a good predictor for individual behavior (Ajzen, 1991). Therefore, entrepreneurial intention is seen to be a reliable indicator of entrepreneurial action. People started a business as a result of a variety of situational conditions and views (Shapero & Sokol, 1982). Moreover, a person would not become an entrepreneur without any stimulants because becoming an entrepreneur is a process involved intention and planned behaviour (Krueger et al., 2000). As Bird (1988) mentioned, a person would show certain level of entrepreneurial intention prior to becoming an entrepreneur. Entrepreneurial intention can be described as "motivational factors that influence individuals to pursue entrepreneurial outcomes" (Hisrich et al., 2017, p. 16). Since entrepreneurs are not born, studying entrepreneurial intention is crucial because it serves as an initial step in developing competitive entrepreneurs (Boulton & Turner, 2005; Mellor et al., 2009).

Many factors have contributed to formation of entrepreneurial intention. Previous studies found that one of the factors was entrepreneurship education. For instance, Keat et al. (2011) concluded that entrepreneurship education was an influential factor of entrepreneurial intention. Indeed, individuals who have completed entrepreneurship course demonstrated high level of entrepreneurial intention (Farashah, 2013). True, students who completed entrepreneurial education and training would develop entrepreneurial thinking and skills, which persuaded them to choose entrepreneurship as career (Mavrina & Mingaleva, 2017). Furthermore, individuals who followed entrepreneurial education program gained capacity and desire for business creation because entrepreneurial education positively and significantly affected entrepreneurial intention (Asimakopoulos et al., 2019).

Interestingly, Alshebami et al. (2020) found entrepreneurship education indirectly influenced entrepreneurial intention through attitude and self-efficacy. The result indicated that values and advantages gained from entrepreneurship education should be highlighted in instilling entrepreneurial intention. It could be said that entrepreneurship education does provide learners with the necessary motivation,

knowledge and skills to start a new business. As such, entrepreneurial intention could be considered as an outcome of entrepreneurship course. As described by Hisrich et al. (2017), the perception of feasibility or entrepreneurial self-efficacy, which refers to perception of personal capability to do a task could influence a person's entrepreneurial intention. Thus, student engagement is crucial in influencing the achievement of course outcomes; thus, it is important to investigate is there any relationship between OSE and entrepreneurial intention.

2.3. Research model and hypotheses

Based on the discussion in previous section, it was known that OSE influenced student's achievement and outcome. Entrepreneurial intention could be considered as student's achievement and learning outcome from entrepreneurship course. It is believed that if entrepreneurship course was delivered effectively to students, they would develop interest and intention in becoming entrepreneurs. Thus, this study suggested the following research model (Figure 1). The components of OSE were derived from Dixson (2015). It is worth mentioning that the component of performance in Dixson's model was not taken into consideration because student had not received their results during the time this study was performed.

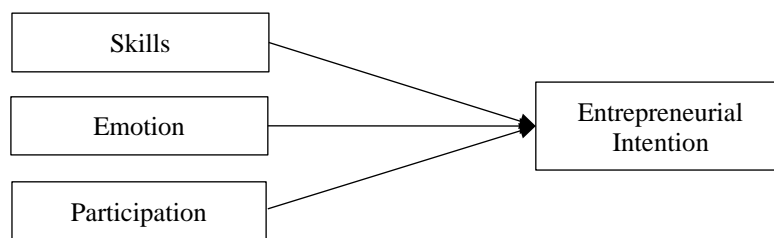


Figure 1. Research model

Three hypotheses were suggested to guide this study:

H1: Significant relationship exists between skills and entrepreneurial intention.

H2: Significant relationship exists between emotion and entrepreneurial intention.

H3: Significant relationship exists between participation and entrepreneurial intention.

3. Methodology

The purpose of this research was causal in nature because it intended to determine the influence of three elements of OSE, namely skills, participation, and emotion on entrepreneurial intention. Therefore, quantitative research method was employed because all variables were measurable. Specifically, questionnaire survey was used in collecting the desired information because student engagement could be easily scaled (Henrie, 2016). The survey was carried out in non-contrived setting, in which very minimal interference from researchers was involved. In addition, the data were collected just once by employing a cross-sectional time-horizon. The unit of analysis was individual undergraduate students who registered and attended the compulsory course called "Principles of Entrepreneurship".

Full-time students registered for the course “Principles of Entrepreneurship” in a Malaysian public university throughout the period of COVID-19 were identified as the population of this study. The students attended the course through “open and distance learning” (ODL) method due to closure of university and restriction to have face-to-face classes in the university. The population size was 681 elements. This study employed simple random sampling technique in determining the sample size, in which every element in population were having equal chance to be selected as subjects in sample (Sekaran & Bougie, 2016). Specifically, a name list of students registered in the course was obtained from academic department. The subject was then selected from the list by referring to random number generated by random number generator. Based on the sample size table established by Krejcie and Morgan (1970), if a population size was 700, then at least 248 cases were needed. Therefore, the researchers randomly selected 300 students and questionnaires were sent to them. However, a total of 290 usable responses were successfully collected.

Since students were attending online classes, an electronic self-administered questionnaire was developed and distributed to students to collect the desired information. Self-administered questionnaire was used because it was suitable for survey which was confined to a local area and the responses could be collected within a short period of time (Sekaran & Bougie, 2016). In ensuring the reliability and validity of research instrument, all items were adapted from published literatures. Particularly, 17 items were adapted from Dixson (2015) to measure elements of OSE (skills=6 items; emotion=5 items and participation=6 items). For these items, students were asked to rate how well the behavior, thought, or feeling represented them when they were attending the course. All items used five-point rating scale, ranging from “1=not at all characteristic of me” to “5=very characteristic of me”. In addition, six items in measure entrepreneurial intention were adapted from Liñán and Chen (2009). Students needed to indicate their extent of agreeableness or disagreeableness on the statements given, based on five-point Likert scale, ranging from “1=strongly disagree” to “5=strongly agree”. An e-questionnaire link was created and distributed to students with the assistance from academic staff. A reminder was sent to them after two weeks.

4. Findings and Discussion

4.1. Respondents’ background

The researchers distributed 300 questionnaires to the sample subjects and successfully collected 290 completed and usable responses at the end of data collection period. Hence, it yielded a pretty impressive response rate of 96.67%. The response rate was considered high because data were collected with help from academic staff. As for the respondents’ background information, it found that a great number of respondents were female (f=238; 82.07%). Respondents studied in Faculty of Business and Management (f=235; 81.03%) and Faculty of Hotel and Tourism Management (f=55; 18.97%). In terms of online studying hours that respondents spent on the course, most of them spent averagely two to less than three hours per week (f=92; 31.72%). There were 250 respondents (86.21%) finished one to two exercises in a week.

4.2. Descriptive and Pearson correlation analyses

Table 1 depicted the findings of analyses such as reliability, descriptive and correlation. This study used inter-item consistency to determine the reliability or stability of items measuring the variables. In

particular, Cronbach's alpha (α) was used as the indicator of internal consistency. As all alpha values were greater than 0.80 (between 0.840 for skills and 0.958 for intention), they were deemed as preferable (Pallant, 2016). In terms of rating for elements of OSE, the respondents rated highest on participation ($m=3.613$; $sd=0.710$) and lowest on skills ($m=3.537$; $sd=0.610$). Whereas entrepreneurial intention obtained a mean score of 3.536 ($sd=0.855$).

According to Pallant (2016), Pearson correlation can be used to determine the strength and direction of relationship between two interval-level variables. Table 1 shows the correlation coefficients (r) between pairs of variables in this study. Significant associations were identified in all pairs of variables. Specifically, skills and emotion recorded the strongest correlation ($r=0.827$; $sig. <0.01$), while participation and entrepreneurial intention obtained the weakest correlation ($r=0.453$; $sig.<0.01$). Multicollinearity was not found and all variables were retained because none of the r -value was overly high (>0.90) (Pallant, 2016).

Table 1. Cronbach's alpha, mean, standard deviation and correlation

	α	m	sd	Skills	Emotion	Participation	Intention
Skills	0.840	3.537	0.610	1			
Emotion	0.890	3.578	0.675	0.827**	1		
Participation	0.871	3.613	0.710	0.721**	0.723**	1	
Intention	0.958	3.536	0.855	0.545**	0.670**	0.453**	1

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

Table 2. Multiple linear regressions

	Std. Beta	t	Sig.	Tolerance	VIF
Skills	-0.004	-0.044	0.965	0.285	3.511
Emotion	0.719	8.729	0.000	0.283	3.533
Participation	-0.064	-0.962	0.337	0.429	2.329
F-test	78.158 (sig<0.01)				
R ²	0.451				

Dependent variable: Entrepreneurial intention

The research model used in this study was statistically fit and acceptable ($F=78.158$; $sig.<0.01$). Hence, all independent variables explained the dependent variable well. The R-squared value of 0.451 indicated that skills, emotion and participation (independent variables) explained 45.10% of the variance in entrepreneurial intention (dependent variable). While other factors explained the other 44.90% of the variance in dependent variable. The results further indicated that emotion ($\beta=0.719$; $sig.<0.01$) influenced entrepreneurial intention significantly. However, skills ($\beta=-0.004$; $sig.=0.965$) and participation ($\beta=-0.064$; $sig.=0.337$) did not have significant relationship with entrepreneurship intention. As such, H2 was supported, while H1 and H3 were not supported.

4.3. Discussion

The analysis in previous section tested three hypotheses. However, it was regretted that only H2 was supported, Thus, it revealed that emotion and entrepreneurial intention were significantly related. It supported previous studies such as Kucuk and Richardson (2019), in which they pointed out that providing and maintaining students' emotional engagement could contribute to students' overall satisfaction. Students

might find that the course was relevant to their life because entrepreneurship could be deemed as a career choice after their graduation. As such, they showed desirability in learning the course. As Hisrich et al. (2017) delineated, perceived desirability was a factor influencing entrepreneurial intention.

Interestingly, this study found that the other two hypotheses (H1 and H3) were not supported. Whereby skills and participation did not have significant relationships with entrepreneurial intention. The finding was in contrary to previous research such as Rodgers (2008), Jaggars and Xu (2013) and Gray and DiLoreto (2016). Many reasons could have caused the insignificant relationship between skills, participation, and entrepreneurial intention. As mentioned earlier, students learned entrepreneurship in classroom setting before the COVID-19 pandemic. However, they were forced to switch to online learning platform drastically due to the pandemic. Thus, many of them were actually not well-prepared for it because they did not have enough experience in learning through Internet before the outbreak. Online learning demands different learning skills from its learners, for examples learners need be independent and self-directed. Therefore, students might lack of necessary online learning skills, which caused them not motivated in becoming entrepreneurs.

Bolliger and Halupa (2018) found that students demonstrated low engagement through participation activities in learning online course; for examples students did not show interest in learning about their classmates and socialization. In terms of this study, perhaps interaction between lecturers and students might also be insufficient in the learning process due to online classes. As Briggs (2015) mentioned, students were not able to have personal interactions with their teachers and classmates during online classes. Thus, students might not develop high level of interest towards entrepreneurship because there was no face-to-face guidance on entrepreneurship. In addition, the lack of interaction could be caused by online learning facilities used. For examples, low Internet speed, narrow Internet coverage, limited Internet data, unsupportive and complicated online learning platforms might hinder interactions between lecturers and students. In addition, unavailability of comprehensive and interactive online learning platform among the students might also be a cause. Lack of interaction among peers and support from peers and could also prevent students in developing interest towards entrepreneurship.

The contradicting result further showed that imparting entrepreneurial knowledge could not be done solely through online platform without any practical opportunity. As Hasan et al. (2017) showed, types of entrepreneurial education were important in entrepreneurship development in university. Specifically, motivational entrepreneurship education emphasizes on structured and unstructured practical situations to let the learners have a feel of real business start-up. Meanwhile, augmented entrepreneurship education involves frequent interaction with successful entrepreneurs, filed works and project works (Hasan et al., 2017). Thus, both practical and interaction methods in teaching and learning entrepreneurship are important in bolstering entrepreneurial interest among students.

5. Conclusion

The objective of this paper was to determine the influence of OSE on entrepreneurial intention among university students. The statistical results found a positive and significant relationship between emotion and entrepreneurial intention. However, skills and participation did not have any significant influence on entrepreneurial intention. As such, it concluded that not all elements of OSE would determine

entrepreneurial intention among students. Learning entrepreneurship solely through online learning platform without sufficient skills and interaction could not develop sufficient entrepreneurial interest.

The contribution of this study is two-fold. First, it enriched the literature by applying OSE in determining entrepreneurial intention. Although the results were somehow contradicted to previous studies, it highlighted that emotion was one of the OSE element which played a significant role in influencing entrepreneurial intention. As such, OSE is a concept which worth to be further researched in studies pertaining to entrepreneurship education, especially in online learning mode. Second, it contributed to practice in entrepreneurship education and development. It showed that entrepreneurship education should integrate both theoretical and practical learning into its curriculum design.

Based on the findings, it is suggested that students should be given opportunities to participate in actual business operations such as business incubator or student business center. In addition, students should also gain practical entrepreneurial knowledge through successful entrepreneurial firms such as doing internship in entrepreneurial firms to have real-life experience and hands-on practices. Furthermore, enhancing online learning skills and ensuring active interaction are crucial in online entrepreneurship education. It is recommended that online entrepreneurship course providers should support students with technology to enhance its learner's skills and encourage greater interactions. As for online entrepreneurship learners, they are suggested to be well-prepared and self-motivated to learn in online learning environment. In other words, they should take various initiatives in online learning and should not be too dependent on instructors. As for future studies, they should extend the research model by integrating other elements. Furthermore, as entrepreneurial intention is a complex concept, future research could consider mediating or moderating effects in the relationship between OSE and entrepreneurial intention.

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