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Online Student Engagement in Fundamentals of Entrepreneurial Acculturation during COVID-19 Outbreak

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Abstract

The purpose of this study is to investigate student characteristic and the level of online student engagement in entrepreneurship course. The study received 467 valid survey questionnaires from undergraduate's student that enrolled in entrepreneurship course. The respondent is student from science cluster background. The study uses a quantitative approach, and purposive sampling was used to choose the respondents. The online survey questionnaire was self-administered using online google form and the results are analyzed using SPSS version 24. The foundation underpinned theory for this study is self-determinant theory. The results show that emotional engagement score the highest mean compare to skill engagement and participation engagement. The aims are to explore the factors influencing the online student engagement such skills engagement, emotion engagement and engagement during Covid-19 pandemic period. During the outbreak has forced all universities to adopt e-learning. The online learning is a new trend that had been practice in education 4.0. However, student engagement remains as an issue in online learning because the setting in online learning is different from traditional classroom learning. In addition, online student engagement is still considered a relatively new concept and studies are scarcely available. The findings also indicated that student prefer to choose hybrid approach in the future. These studies are important because they aim to improve online student learning by enhancing students' overall satisfaction with the experience. Second, to design and develop an interactive course where students are actively participating and involved in their class. Third, by assessing online student engagement as a potential student pathway on academic progress based on skills engagement, emotional engagement, and participation engagement, this study adds to the body of knowledge in the existing literature. A conceptual framework between online student learning and student performance should be developed for future research.

Keywords: Online Student Engagement, Student Engagement Skill, Emotion, Participation, Student Engagement

Introduction

Back in early 2020, the covid-19 has forced the higher learning and school to shut down all across the world. Leaving the students are out of the classroom. The Movement Control Order (MCO), though not unexpected, took Malaysians off guard when it was implemented on 18 March 2020 for two weeks until 31 March 2020, then extended to 14 April 2020. This initiative aimed to prevent the Covid-19 spread and, presumably, break the cycle of the deadly disease's rapid transmission. This is a once in a lifetime incidence in Malaysia. For a few days, all institutions of higher learning were at a loss as to how to deal with this abrupt transformation. As a result, education has undergone a significant transformation because to the particular growth of e-learning, in which lessons are delivered online and through digital platforms. Most of education institute change the traditional learning into online learning. Online learning can be defined as learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access (Dhawan, 2020). It indicates that the lecturer has the option of holding the class online in real-time or via a pre-recorded session. Online classes can conduct using google meet, Webex, or Microsoft team. For pre-recording session, lecturer can upload on YouTube. Online learning has been studied in higher education (Chiu, 2022; Dhawan, 2020; Hsu et al., 2019). However, the impact of lecture on university students is very different from the primary and high school students. As a result, we understand very little about how undergraduate students engage in online learning from a self-determinant theory (SDT). The study uses self-determinant theory (SDT) to explain the framework for this study. The student engagement during learning activities is very important, especially during online learning during covid-19 outbreak. Student engagement refers to students' active involvement in educationally effective methods and their dedication to educational goals and learning. It is a key to highly valued educational outcomes like academic achievement (Christenson, Reschly, & Wylie ,2012). Most universities offer entrepreneurship as a required or elective course. It is typically taught in a traditional setting using the face-to-face classroom method. However, many people used an online platform to respond to COVID-19 (Koe, Mahphoth, Dirgantari, & Hidayat, 2021). Therefore, this study is investigated student characteristic and the level of student engagement in Fundamentals of Entrepreneurial acculturation or knowns as *Asas Pembudayaan Keusahawanan* (APK) course at Universiti Malaysia Sabah. It is one of the Institute of Higher Learning (IHL) Malaysia curriculums aimed at introducing entrepreneurship characteristics, knowledge, skills, and to increase student interest. Furthermore, this course intends to inspire students to pursue careers in entrepreneurship following graduation. This course focuses on experiential learning; thus, students are requiring to perform digital business in which they must sell the company business using digital technologies. There has been less research into how effective digital entrepreneurship education is in universities because the course was taught online during the pandemic period (Yong & Zainal ,2021). However, there has been little research focusing on online student engagement in teaching entrepreneurship courses online in the literature. Especially for student came from science background cluster. In this study, it investigates student characteristic and the online student's engagement is measure based on skills engagement, emotion engagement and participation engagement.

Objective of the Study

1. To investigate student characteristic during online classes.
2. To investigate the level of online student engagement in APK courses.

Problem Statement

Student engagement is critical to student learning, particularly in the online environment, where students may feel isolated and disconnected. Thus, the covid-19 pandemic has shifted the teaching and learning process away from the traditional face-to-face classroom and toward remote and online methods. Furthermore, many students may need to learn basic of online learning (Koe et al., 2021). The pandemic has prompted both academics and practitioners to reconsider future education, in other words, students and lecturers should demonstrate that using technology as a tool for learning in an active research area. (Ryan & Deci, 2020). During online learning, the lecturer uses online platform for teaching and learning. This includes using Google Meet, Webex, and Zoom as part of the online class teaching approach. Because the use of online learning is not new and has gain a lot of interest from other scholars, academics began conducted numerous studies on the effectiveness of online learning. Even if online learning will not be fully implemented in the learning environment since many students prefer face-to-face classes, it must be overlooked that online learning has its own relevance in the learning process itself, particularly during Covid time (Nordin et al., 2021). Moreover, the majority of studies have attempted to analyses student satisfaction or desire using online learning, while some have investigated the factors that lead to student engagement (Inder, 2022). Previously, a study was conducted in India with students from urban and semi-urban area. This research model can be used to address student engagement under different condition and discipline (Inder, 2022). As a result, this study focuses on students in the science cluster who take entrepreneurship or APK courses. Meanwhile, Elshami et al (2022) point out that lecturer should think about honing their techno-pedagogical abilities in order to increase student participation in online courses. However, there has been little research done to comprehend online student engagement in an entrepreneurship course. As a result, this study provides insight into what engages science clusters student who are taking entrepreneurship courses during online learning in Universiti Malaysia Sabah. Thus, the aims of this study are to investigate the student characteristic and the level of online student engagement during the online learning at pandemic period.

Significance of the Study

The importance of these studies is that we focus on online student learning in order to boost student satisfaction when learning the course, enhance student motivation to learn, reduces the sense of isolation during online class and improves student performance in the future. In addition, the findings might made a significant contribution to the literatures by demonstrating the level of online student engagement in entrepreneurship course. The engagement results provided an understanding of the type and level of student engagement in online learning. Though the student is responsible for academic tasks, it is the lecturer members obligation to construct purposeful course designs that encourage engagement, involvement, and communication in the online learning environment as suggested by Johnson, 2003. Similar findings suggested that it provides the framework for the development of effective programmes that will engage students and, as a result, ensure their relevance in the competitive educational world (Zainol et al., 2017). For the up coming student intake in future, the lecturer can create an entrepreneurship course using a novel hybrid learning and teaching approach. For example, lecturer can use a 70% face-to-face class and 30% online class. So that, student would enjoy and participate more in the class.

Underpinning Theory

The foundation for this is self-determination theory (SDT). Self-determination theory is the study of how and why people act, taking into account the causes and effects of more or less autonomous and controlled reasons for participation (Deci & Ryan, 2000). The self-determination theory is aligned with online student engagement. Student engagement is a multidimensional construct with four dimensions: behavioral, cognitive, emotional, and agentic (Chiu, 2022). Furthermore, student engagement has traditionally been viewed as an effect of motivational processes; promoting various sorts of motivation as an energy source that motivates student to participate in learning activities (Reeve, 2013). Theoretically, SDT Self-determination theory defines intrinsic and extrinsic sources of motivation, and its propositions focus on how social and cultural elements enhance or degrade human well-being and performance quality (Ryan & Deci, 2020). Previous research had confirmed that students' behavioral, emotional, and cognitive engagements aid in academic progress (Reeve, 2013). As a result, the purpose of this study was to add to the existing literature by evaluating online student engagement as a potential student pathway on academic progress based on skills engagement, emotional engagement, and participation engagement. it is not only for well-established learning-related outcome, but also a more inspiring, engaged, and supportive learning environment for new students. Where research attempts to understand student engagement in online classes during a pandemic outbreak. It focuses more on intrinsic motivation and how students participate in the online learning environment versus face-to-face settings in the past.

Literature Review

Online Student Engagement

There is no clear definition of online student engagement in the literature. Before Covid-19 pandemic, studies of student engagement had focused on traditional classroom settings. However, more research into student engagement in an online learning environment is required. The concept of student engagement in online learning is different from traditional classroom setting because student is separated from the lecturer and student. Where the lecturer cannot see and feel them. Prior study defined student engagement as a complex and multidimensional construct with three distinct but interrelated dimensions, namely the behavioral, cognitive, and affective dimensions, each with its own set of characteristics (Fredricks, Blumenfeld, & Paris ,2004). According to another researcher, student engagement is the combination of students' commitment to academic objectives and learning and their active participation in practises that are educationally effective, and it is a critical pathway to highly valued educational outcomes such as academic achievement (Christenson et al., 2012). In Taiwan, some kids work harder, with more enthusiasm, and with more strategy than others in response to the learning activities their teachers provide. Students' learning and success can be predicted in large part by their individual behavioral, emotional, and cognitive traits. (Reeve & Tseng, 2011). In Philippine, students are able to practice self-care despite the presence of impediments involving quarantine and online classes. Significantly lower levels of self-care activities were observed among older, female, low-income students with limited Internet connectivity. Self-care has the ability to increase online student engagement (Cleofas, 2021).

Previous finding indicated that institute higher learning to build their own set of guideline and embedded the dimension of student engagement in the design, structure and delivery of the online course (Inder, 2022). Gunuc & Kuzu (2015) pointed out that a higher

student engagement score indicated that the student was engaged with the university, campus, and class, whereas a lower score indicated that the student's engagement with the university, campus, and class was weak or that disengagement could occur.

Previous research on student engagement has primarily focused on the behavioral and cognitive subtypes of engagement due to their established roles in influencing individuals' academic achievement. Due to the associated lack of conceptual clarity, emotional engagement has received less research attention (Sagayadevan & Jeyaraj, 2009). However, in this study, it focusses on skills engagement, emotion engagement and participation engagement. This is due to the fact that this is the most important engagement for students to learn and understood about the course subject. Where the concept of multidimensional engagement, which the aspects such as emotions, cognitions, and behaviors, has been the most dominant perspective on student engagement over the last decade (Fredricks et al., 2004). Skill engagement refer to making efforts regularly to study, reading, taking note, making presentation and attending video session (Dixson, 2015). Another study indicate that students are willing to use their own resources, such as time and effort, to complete the study material, is marked by skill engagement (Inder, 2022). Emotion engagement refers to the learner emotion about the learning and feel more emotionally engaged with course (Dixson, 2015). As a matter of fact, Inder (2022) point out that if a student is emotionally invested in the educational process, he or she will make every effort to perform at the highest level and complete all assignments according to the course schedule. Participation engagement refer to student when they interact with peers and instructor who enjoying the content of the course (Handelsman et al., 2005). A recent study found participant involvement and value to students to be difficult (Inder, 2022). Although it can be difficult to keep students engaged during online courses, this aspect of student engagement has been given enough weight. As a result, this study focuses on the student's level of skill, emotion, and participation in the entrepreneurship course, which received the highest mean score and how it contributes to future research.

Methodology

A quantitative questionnaire research design was conducted to collect the research data. The questionnaire develop for this study consists of two sections with questionnaire-statements from previous studies. The questionnaire survey was distributed to science-cluster students that enrolled in the Fundamental of Entrepreneurial Acculturation (APK) course at Universiti Malaysia Sabah in semester 1, 2021/2022. This student background science cluster, which included science, technology, and engineering. A convenience sampling was used using online survey questionnaire method. The items in the survey questionnaire were adopt and adapted from past studies to ensure it reliability and validity (Dixson 2015; Koe et al., 2021). This study only adapted 17 items such as skill=6 items, emotion item=5 items, and participation=6 items. The survey questionnaire was distributed to students via online Google form. Students were asked to rate how well the behaviors, thoughts, or feelings described them throughout the course on a five-point scale ranging from 1 (not at all characteristic of me) to 5 (very characteristic of me). A total of 457 valid questionnaire were obtained. This research data collection was analyzed using the Statistical Package for the Social Sciences (SPSS) version 24. The study aims to develop a scale for assessing the level of student engagement for entrepreneurship course during online class in Universiti Malaysia Sabah.

Results

All students, regardless of demographic factors or area of study, reported similar experiences with online learning. Based on Table 1, 74% of those who responded to the questionnaire were male, 26% were female. For ethnicity , 51% were Bumiputra Sabah, 24% were Chinese and 1% were international students. During online classes, 56% of students are located outside of campus. 89% of students answering the questionnaire are from the main campus. 37% of students connect to the internet via WIFI and a home connection. 70% of students prefer online classes with a mix method approach. After completing the course, 68% of the student said they might become entrepreneurs and 9% said no. In the future, 64 % students prefer learning environment with hybrid approach in the future and 20% choice face to face class.

Table 1
Respondent characteristics

Variables	**Descriptions**	**Frequency**	**%**
Gender	Male	336	74
	Female	121	26
Ethnicity	Bumiputra Sabah	235	51
	Bumiputra Sarawak	37	8
	Malay	61	13
	Chinese	109	24
	Indian	11	2
	International Student	4	1
Your location during online class?	Outside Campus	258	56
	In Campus	199	44
Campus	Main Campus KK	407	89
	Labuan	14	3
	Sandakan	36	8
How do you connect to the internet?	Home	171	37
	WIFI University	170	37
	Mobile Data	115	25
Which online classes do you like best?	Mixed	319	70
	Asynchronous	85	19
	Synchronous	53	12
After you finished this course, are you intended to become an entrepreneur?	Maybe	310	68
	Yes	108	24
	No	39	9
In the future, which method of learning do you prefer?	Mixed	292	64
	Online	72	16
	Face to Face	93	20
		457	**100**

Reliability Analysis

Based on Table 2, its summaries the Cronbach's Alpha coefficient value for variables. The analysis recorded that the reliability alpha ranging from 0.852 to 0.859. The result indicated that the Cronbach's Alpha for 17 items measured for the level of online student engagement. There are 6 questionnaire items for skill engagement, 5 questionnaire items for emotion engagement, and 6 questionnaire items for participation engagement. Previous studies suggested that the Cronbach Alpha and the reliability of 0.70 or greater are considered as acceptable. In general, the reliability that less than 0.60 are considered poor, those in the range are accepted because it is over 0.70. Reliability and validity are concepts used to evaluate the quality of research. It indicates how well a method, technique or test measure something. Reliability is about the consistency of a measure, and validity is about the accuracy of a measure (Henseler & Hubona, Ray ,2016). As a result, the internal consistency and Cronbach's alpha of the measures used in this study is acceptable and reliable because it is greater than 7.0.

Table 2
Reliability result

Construct	**Items**	**Cronbach's alpha**
Skill engagement	6	0.855
Emotion engagement	5	0.859
Participation engagement	6	0.852

Descriptive Analysis

Based on a scale of 1 to 5, the overall mean scores can be explained, as shown in Table 3. For example, a mean score that is less than 2 is rated as low, a mean score between 2 to 4 is rated as average or moderate, and a mean score greater than 4 is rated as high as suggested by (Yasin, 2004). The mean values for skills engagement ranged from 3.6958 to 4.0919, which was moderate. Item "I listen/read carefully" was at the top of the list with mean value 4.0910, Standard deviation (SD) is 0.722, followed by item "I am being organized" with mean value 3.9453, and standard deviation (SD) score 0.865. The lowest mean values are item "I stay up on the readings" with mean value 3.6958 and standard deviation (SD) score 0.847. Followed by item "I make sure to study on a regular basis" with mean value 3.7812 and standard deviation (SD) is 0.861. The standard deviation (SD) is ranged from 0.772 to 0.865.

Table 3
Mean for skills engagement

Skills engagement	Mean	SD	Rank
1. I listen/read carefully	4.0919	0.722	1
2. I am being organized	3.9453	0.865	2
3. I take good notes over readings, PowerPoints, or video lectures	3.9147	0.799	3
4. I look over class notes between getting online to make sure I understand the material	3.9147	0.828	4
5. I make sure to study on a regular basis	3.7812	0.847	5
6. I stay up on the readings	3.6958	0.861	6

As illustrated at Table 4, the mean values for emotion engagement ranged from 4.0150 to 4.1532, which was high. Item "I find ways to make the course material relevant to my life" was at the top of the list with mean value 4.1532 and standard deviation (SD) is 0.748, followed by item "I find ways to make the course interesting to me" with mean value 4.1182 and standard deviation (SD) is 0.748. The lowest mean values are item "I am desire to learn the material" with mean value 4.0150 and standard deviation (SD) is 0.719. Followed by item "I apply course material to my life" with mean value 4.0153 and standard deviation (SD) is 0.719. The standard deviation ranged from 0.719 to 0.787.

Table 4
Mean for Emotion engagement

Emotion engagement	Mean	SD	Rank
1. I find ways to make the course material relevant to my life	4.1532	0.748	1
2. I find ways to make the course interesting to me	4.1182	0.747	2
3. I put forth effort in learning this course	4.081	0.788	3
4. I apply course material to my life	4.0153	0.719	4
5. I am desire to learn the material	4.0150	0.787	5

As illustrated at Table 5, the mean values for participation engagement ranged from 4.2451 to 3.4201, which was moderate . Item "I engage in conversations online (chat, discussions, email)" was at the top of the list with mean value 4.2451 and standard deviation (SD) is 0.797. Followed by item "I participate actively in small-group discussion forums" with mean value 4.2319, SD is 0.807. The lowest mean values are item "I have fun in online chats, discussions or via email with the instructor or other students" with mean value 3.9737 and standard deviation (SD) 0.928. Followed by item "I post in the discussion forum regularly" with mean value 3.4201 and standard deviation (SD) is 1.062. The standard deviation ranged 0.797 to 1.062.

Table 5
Mean for participation engagement

Participation engagement	Mean	SD	Rank
1. I engage in conversations online (chat, discussions, email)	4.2451	0.797	1
2. I participate actively in small-group discussion forums	4.2319	0.807	2
3. I get to know other students in the class	4.1904	0.814	3
4. I help fellow students	4.1882	0.872	4
5. I have fun in online chats, discussions or via email with the instructor or other students	3.9737	0.928	5
6. I post in the discussion forum regularly	3.4201	1.062	6

The overall mean values for the three dimension of online student engagement are summarized in Table 6. This study found that level of emotion engagement was at the top with mean values of 4.0765, followed by participation mean values of 4.0416 means score and skills mean values of 3.8906.

Table 6
Mean for Online Student Engagement

No	Particular	Average Mean	Rank
1	Skills	3.8906	3
2	Emotion	4.0765	1
3	Participation	4.0416	2

Discussion and Recommendation

The main claim of the self-determination theory (SDT) is that online student engagement is influenced by three variables, which is skill engagement, emotion engagement and participation engagement. Where previous study had confirmed that students' behavioral, emotional, and cognitive engagements aid in academic progress (Reeve, 2013). In addition, universities should develop guideline to assess student involvement as the online learning experience evolves. The university is debating whether to continue studying in the post-pandemic period or to extend it. However, in the Malaysian context, the institute of higher learning requires that the class be conducted in hybrid setting. Another research suggested that turning e-learning as a cost-saving measure, particularly when they want to reduce travel, cost of utility bills and classroom costs (Chakraborty & Nafukho, 2014). Additionally, when a class is taught in a hybrid setting, the university can save a significant amount of money on classroom expenses. As presented on Table 1, 64% of the students would like to conduct classes in the future using a hybrid setting approach that combines asynchronous and synchronous methods. Therefore, the findings suggested that 70% of classes should be held face-to-face and 30% online class. This means that the online class will be conducted in four weeks and the face-to-face class will be conducted in 10 weeks. That is 14 weeks of blended learning in one semester. When the students take an entrepreneurship course in a hybrid approach learning environment, this can boost their satisfaction and learning experiences learning the course. This claim is supported by research findings that shows 70% of students prefer online courses that use a hybrid teaching style.

The findings of the study revealed that most of the respondents are no sure either they want to become entrepreneurs after finished the course. Because only 24 % respondent answering yes. The majority of the respondent 68%, said maybe. This is due to the fact that this course is from science clusters background with no zero knowledge in business background. As a result, students must alter their perception of the entrepreneurship course. The APK courses can invite an entrepreneur speaker from the science cluster to give talk, motivate and teach them about entrepreneurship in real case study. In addition, to gain students' attention, lecturers can modify the course to make it more relevant to real-world applications.

The descriptive analysis of the three dimensions of online student learning revealed that emotion engagement 4.0765 was ranked first in the list and followed by participation 4.0416. Emotion engagement refers to learner emotion about learning. The data demonstrates that emotional engagement has the highest means. This indicates that even in an online learning environment, students are highly emotion engaged in completing the assignments given. The students able to make the course content interesting and relevant to them. However, for skills engagement 3.8906 the lowest mean, they might forgo taking regular notes, staying up late to read, and studying. This is because of internet problems or their surroundings, it makes them hard to receive and learn the knowledge during online class. Due to the fact that they are staying outside the university during the COVID 19 outbreak. Simply put, emotional

engagement is a student's involvement in and enthusiasm for university. When students are emotionally engaged, they want to participate in the university or classes, and they enjoy that participation more. Lecturer play a crucial role in increasing student engagement through used of effective teaching method. As a result, lecturers might incorporate online classes as an online learning environment. Since the beginning of the following semester on October 2022, all universities will require students to return to campus, where classes resumed to face-to-face approach. The online learning environment is an ideal setting to promote greater involvement in mental capacities (Robinson & Hullinger, 2008). Particularly the mental health of students who have been attending online lessons for nearly two years during pandemic outbreak.

Conclusion

As a conclusion, the paper is to investigate the student characteristic during online class and the level of student online learning during the covid 19 outbreak. Based on the findings, emotion engagement scores the highest means compare to skill engagement and participation engagement. Emotional engagement is a student's involvement in and enthusiasm for the university; when students are emotionally engaged, they will want to participate in the university and enjoy the assigned tasks given. As a lecturer, they could assist the students in assisting one to another before the classes started. The study's contribution included an enrichment of body of knowledge in the literature as well as suggestions to improve university learners' engagement in online learning. Overall, the study's findings have implications for online course design and delivery to ensure student learning in both online and face-to-face settings. The lecturer can create an interactive course outline to motivate and engage students in online student engagement. So, that the student does not feel isolated. This is because the university's next batch of student intake will be hybrid in October 2022. Because it created a pathway for student skill, emotion and participation in online student engagement. The outcome of this study represented a breakthrough for expanding the application of the self-determination theory (SDT) model into the online learning environment. The study can be used to develop a conceptual framework that connects online student engagement and student performance for future research.

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