



## ARE STUDENTS ENGAGING IN ONLINE CLASSROOMS?

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### **Abstract:**

Online learning plays a crucial role in our education system, especially in this time of COVID-19 pandemic, in which online learning is widely and fully implemented in the education system across the world. It is not easy to ensure consistent engagement from students with this current norm in education. Are the students engaging with their peers, their instructor or even with the content of the course? Referring to Moore's interaction framework, this study is aimed to examine further engagement methods used in online classrooms. A set of survey consists of 24 items were distributed and completed by fifty-five students from a public university in Malaysia. The results revealed the functions of the learner-to-learner, learner-to-instructor, and learner-to-content engagements in the online classroom, in which learner-to-instructor engagement plays the most significant role in maintaining students' engagement. The findings of the study could serve as one of the references by educators and even students to improve strategies and performances in online learning.

**Keywords:** online learning, students' engagement, learner-learner, learner-instructor, learner-content

### **1. Introduction**

Emerging Coronavirus Disease 2019 (COVID-19) is currently the world's main concern, and people are struggling to get accustomed to the new norms of life, one of it is to practice 'distance learning.' Online courses, particularly for higher education students, are booming as a result of this trial era. In line with the new norm; social distance, the abrupt shift to online learning due to the COVID-19 pandemic needs to be adjusted by learners and educators to ensure the continuity of education. Ferrer (2019) stated that

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online learning was introduced by the university in its education system back in 1858 when the University of London offered the first batch of online degree courses, the "External Program", and at the time it was the first university in the world to offer such programs. Only 15 years later, in 1873, online learning was introduced to schools in the United States.

In this time of digital age, online learning also combines computer technology and even educational theory, which later contributes to the effectiveness of online education in today's education system. However, interactions during online learning need to be planned wisely, as online learning could be challenging for some groups of people. Oswal and Meloncon (2014) and Saadatmand and Kumpulainen (2014) agreed that interactions during online learning should be managed carefully, together with the implementation of interactive learning tools and technology integration, in order to promote effective online communication in and outside of the online classroom. Several studies on students' interaction in online learning have been conducted mainly in the area of student-instructor-material engagements to identify every aspect that could contribute to the improvement of interactions in online learning.

The need to use online platforms as the main mean of education is indeed an overwhelming fact to be accepted by all. For students, they need to adapt to the use of the online medium of education at its maximum extent in a short time, which also means that they need to give extra efforts to stay focus in the online learning process. The challenges could be more significant for educators to provide materials that include both interactive activities and an exciting style of teaching. Dhull and Arora (2019) stated that the lack of knowledge and awareness on the use of online learning platforms could affect the learning process negatively which can lead to the problems such as feeling isolated, poor communication and performance, stress and more.

Therefore, studies on the topic of interaction and engagement in online learning should be conducted to provide in-depth views on the challenges of online learning and ways to create a better online learning environment to students. Skrypnyk, Joksimovic, Gasevic & Dawson (2015) noted that engagement and interaction between both educators and learners are necessary to go through the process of searching, rationalisation, creation and sharing of content on online platforms to promote effective education. This shows the importance of engagement, not only between students but also between students and instructors as well as students with the content of the lessons itself. Hence, this study aims to identify the factors that influence students' engagement in online learning. Specifically, this study is does answer the following questions;

- 1) How does online learning influence learner-learner interaction?
- 2) How does online learning influence learner-instructor interaction?
- 3) How does online learning influence learner-content interaction?

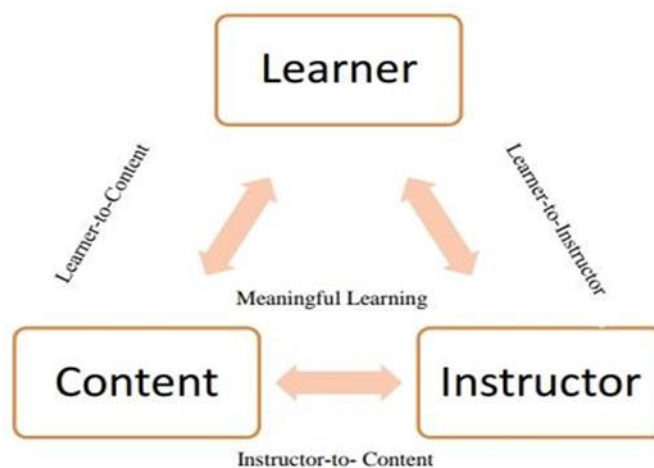
## 2. Literature Review

### 2.1 Introduction

This section contains the theoretical framework of students' engagement in online learning, learner-learner interaction, learner-instructor interaction and learner-content interaction in online learning. The researcher also put into the previous research on students' engagement in online learning to relates to this study.

### 2.2 Theoretical Framework of Students' Engagement in Online Learning

Learner-to-learner, learner-to-instructor-and learner-to-content are types of interactions in online learning that are interrelated, in which all three elements are essentials to one another (Martin & Bolliger, 2018). Several past studies depict the relationship between three of these essential elements; learner, instructor and content. Moore's (1993) interactions model has been used in several studies of online learning engagement. Peer, instructor and the content of the online lessons itself affect the performance of students in the online classroom. Interactive activities prepared by instructors promote active participation (Gutierrez, 2013) and students' collaboration (Lee, Song, & Hong 2019), meanwhile interesting material of learning motivates students to stay engaged in online learning (Dixson, 2010). Referring to Moore's framework (see Figure 1) on students' interactions in online learning, three types of interactions; learner-to-learner, learner-to-instructor and learner-to-content, were identified as the essential elements in the online learning environment in order to create a compelling and meaningful online learning experience.



**Figure 1:** Types of Interactions in Online Learning (Source: Martin & Bolliger, 2018)

### 2.3 Learner-Learner Interaction

Learner to learner interaction involves activities such as student collaboration and community support

### **2.3.1 Student Collaboration**

Learner-to-learner interaction promotes student engagement through student collaboration, which could improve learner understanding and perspectives on the use of online communication tools. Collaborative learning and peer interaction are becoming an essential factor in online learning. "Working collaboratively using online communication tools" (Martin & Bolliger, 2018, p. 216), improves analytical skills for learners and enables them to further their learning. According to Young and Bruce (2011), instructors also need to figure out how to assist group assignments and facilitate shared group objectives, for example coordinating collaborative groups to encourage online learning. Dikkers, Whiteside, & Lewis (2013) found that from his study, students are more likely to seek help or assistance from their peers than from their class instructors, who also demonstrate student leadership.

In the meantime, for the use of grouping works as an attempt to facilitate collaborative peer learning, Lewis, Whiteside & Dikkers (2014) suggested that online activities that group students should be tailored to their needs or pairing peers who can work with them one-to-one should be planned. Besides, teachers should include collective communication-related decision-making that allows students to engage in online discussions (Young & Bruce, 2011) since it is the best practice that can be applied to improve student engagement. Next, the use of synchronous platforms and asynchronous communication can improve student engagement in a more profound discussion of online learning. Baker (2011) proposed the concept of icebreaker discussions, where teachers may be introduced to each community. Icebreaking activities in the online learning environment have shown to create a collaborative atmosphere and to develop engaging, entertaining experiences among students (Watkins, 2014). The emphasis for learning-to-learner interaction is, therefore, on how to promote student communication that might result in a deeper understanding of students.

### **2.3.2 Community Support**

Next, learner-to-learner interaction and community support are connected, in which socio-emotional leads to the supports of student's well-being through sustained communication. The community support factor is connected to the psychological state of the learners (Lee et al., 2019), where the sense of community that is formed among learner-to-learner engagement in the same online courses. Lee et al. (2019) describe the emotional sense of belonging can be part of the factor that helps students to engage in the online class and prevent dropouts. In other words, instructors and peers try to develop more fruitful communication to enhance the retention rate so that learners could feel an emotional sense of belonging in the learning community. Borup et al. (2014) elaborated that students have the potential to support their peers in the class. Thus, students' potential to support their peers is enabled to enhance this engagement.

Moreover, students who feel that they had a sense of community belonging and also support from their peers, actually encourage them to finish their group work (Borup, 2016). For instance, chat sessions, discussion boards, wikis, blog or group tasks are recommended to be used to promote learners-to-learners engagement (Martin & Bolliger,

2018). Also, Martin and Bolliger (2018) suggested the use of a web-based application such as Google applications, audio, video, twitter feeds to improve students' engagement in online learning. These kinds of activities help students to build a sense of community belonging and support. They also felt a connection and the need to interact with other students in online classes frequently. Furthermore, creating various more profound dialogues sessions could contribute to the sense of community in groups and the whole class (Liu, Magjuka, Bonk & Lee, 2007). Therefore, students' engagement can be built with a sense of community belonging.

## **2.4 Learner-Instructor Interaction**

Learner to instructor involves teaching activities and the continuous interactions between the learners and the instructors.

### **2.4.1 Teaching Activities**

Well-planned teaching strategies and ongoing assessments by instructor improve the online learning process and at the same time, could encourage the students to stay engaged. Gutierrez (2013) noted that instructors need to make sure that the teaching style involved students' active participation in keeping students interested in the discussed topic. Using questions to start on the discussion to sparks students' curiosities and dividing students into working groups are undoubtedly helping to produce an active interaction and engagement between students and instructor (Illieva, 2019). This is because the students tend to keep asking for clarification from the instructor about the given tasks. The instructor encourages all students to get involved in the brainstorming in groups which requires cooperation from all members (Gutierrez, 2013). Illieva (2019) added that instructors' continuous evaluation and assessment of the students' work and involvement in the virtual online class are also critical to keep all students engaged without anyone being left out. The process of grading provides some forms on the feedback of the students' performance and understanding (Palmer, 2010). Grading can be done, for example, in the form of a 100-point numerical scale or letter grading (Reddy, 2020). However, Palmer (2010) noted that the aim of the teaching should not be focused solely on grading, but it should be aimed to deliver understanding and clear instructions instead.

### **2.4.1 Continuous Interaction**

Continuous interaction between students and instructor should also be practised with the integration of technology as the alternative medium of communication and by maintaining effective communication at the individual and group level. Farid (2014) mentioned that after the lessons' period, the process of delivering and searching for information should not end there. After class, a short discussion could be done through the integration of technology, by using social media platforms, for example, WhatsApp and Facebook. It is easy to be accessed by students, and instructors can guide students' interaction to keep on track of their works (Reddy, 2020). Online learning can be challenging for both students and instructor to keep up with every individual's phase of

learning. For slow learner especially, not only the groups' level communication is required but also on the individual level. Instructor and students need to find a better way of communication and interaction like personal email or messages that they could use to reconfirm the delivered information were understood correctly (Farid, 2014).

## **2.5 Learner-Content Interaction**

Learners learn best through activities and the user interface.

### **2.5.1 Learning Activities**

In ensuring that students continue to engage with the content to achieve the lessons' objectives, the learning activities should be varied and creative to increase the interaction as online learning may be challenging to focus by some students. Throughout the course, students can get bored doing the same type of activities; thus, different types of activities should be constructed. Besides, Dixson (2010) reported that the learners found that a variety of activities made them feel engaged, which include the course management system features, efficient communication, and course facilitation strategies. The activities should be varied by combining both synchronous (real-time task like a discussion) and asynchronous (completed the tasks independently) activities. This will allow the students and instructors to enjoy the different formats of delivery regardless of their schedules or preferred methods of learning. Banna, Stewart, Lin & Fialkowski (2015) stated that both synchronous and asynchronous activities in online learning are perceived as effective options to help students access online content critically. Besides, this approach also offers students access to immediate assistance if necessary while still enabling them to learn at their own pace.

In addition, the addition of creative activities such as the real-world implementation of projects is another technique for promoting learner-content engagement. According to Rahmat, Abdullah & Kashiwazaki (2020), learning activities allow learners to learn through experiential learning-learning through active involvement. Martin and Bolliger (2018) argued that this form of practice could improve the subject-matter and critical thinking skills of the learners. According to Britt (2015), this form of activity contributes to the validity of the content of the course as it demonstrated the examples from the real world. Other than that, Revere and Kovach (2011) indicated that bringing content alive with correct technologies would increase student involvement. Instructors should be critical in selecting resources and content to make students more interested when online learning. Instead of merely presenting students with a resource list, instructors must plan creative and meaningful exercises that can provide an opportunity to analyse tasks from various points of view and enable learners to use relevant knowledge wisely in the process. The variety and creative activities are, therefore, crucial in online learning because they can develop the attention of the students to engage with the content as the focus of the learners can be lost during the online learning.

### **2.5.2 User Interface**

Another way to enhance the interaction between learner and content is through improving the online class user interface in which it needs to be well-designed and simple. Pedagogically user-friendly online course interface and management systems need to be developed, as they influence participation and learning (Vonderwell & Zachariah, 2005). Chou (2000) had also stated that online distance learning mediums should be well designed to encourage interaction between learner-learner, learner-instructor and learner-content. Instructors and educational designers should ensure that the content is well-organised; the learners can easily access online content. Conole (2013) has shown that transparency, requirements and evaluation in the course are crucial in order to enable students to get an overview, navigate and find the motivation to communicate with the course, instructors and peer learners.

Furthermore, well-organised discussion spatially and visually can contribute to coherent and meaningful participation. The interface of online learning should also have a simple design for interaction between learner and content could occur. It should not be very complicated since not all learners have the same degree of proficiency. Research from Alhih et al. (2017) showed that the interface should be simple, understandable, user-friendly and complete, in order for learners to interact with the content. As students should be familiar with the technology and information network by providing a simple interface, they can adapt to the continually changing technologies and interact with the medium that they use. Therefore, the user interface also plays a crucial role in engaging learner-content interaction.

## **2.6 Past Studies on Students' Engagement in Online Learning**

### **2.6.1 Past Studies in Learner-Learner Interaction**

This study allocated an outline of a college development course that draws on a learner-centred framework for participating students in online learning. Leslie (2019) examined the way to engage students online in order to explain a web college development pilot course. The qualitative research design was used in this study. Eight college members with different disciplines background participated in a web college development course. The Trifecta of Student Engagement was used as a framework for the course. Participants were required to use Trifecta of Student Engagement framework to a course they learnt. Then they had to share what they did using net presentation, written document or webinar. The college participants' presentations and written reports were analysed. The results revealed improved student engagement and satisfaction when they applied the Trifecta of Student Engagement within the courses. Positive responses were gained through the learning activities which promote student-to-student engagement, student-to-content engagement and student-to-instructor engagement. Therefore, education institutions should apply methods and tools that promote student-to-student engagement, student-to-content engagement and student-to-instructor engagement in their online learning.

Next, the usage of net learning tools and growth in computer-mediated instructions has prompted analysis within the space of online learning. For instance,

Dwivedi et al. (2019) examined the importance of teachers' engagement and students' engagement in blended learning, whereas focusing on factors affecting this engagement. Quantitative and qualitative research designs were used in this study. 152 postgraduate students in a higher education institution participated in this study. They were divided into two groups according to course. Both instructors who are instructor A had delivered the course in traditional learning, whereas instructor B teaching on the learning management system (LMS). The net activities of the two instructors were monitored on the LMS and then compiled, and the data were analysed. Semi-structured interviews were conducted to investigate the feedback of students and the explanations of their engagement in class. Based on the findings, the data reveals; students behaviour, time spent by students in their online learning with an instructor, motivations of instructor responses to students' activities and online content is expounded to the syllabus of the subject. This study is significant to be applied to higher education, which could help in developing online courses for students.

### **2.6.2 Past Studies in Learner-Instructor Interaction**

In the previous study by Martin and Bolliger (2018), entitled 'Student Perceptions on the Importance of Engagement Strategies in the Online Learning Environment', the research is aimed to study students' perception on the engagement strategies used in online learning using Moore's (1993) three types of interactions. One hundred fifty-five students completed a survey of learner-learner, learner-instructor and learner-content engagement strategies. Approvals from the relevant institutional review boards have been sought before the data collection. In 2016, data were then gathered through an online survey platform, with volunteer participation as well as anonymous answers. The instrument is developed by the researcher and reviewed by five members of an expert panel before the data collection. A total of 38 questions were developed; three open-ended questions, six demographic questions and 29 Likert-type items. Based on the data collected, three new variables on the three types of interaction were created. The independent samples t-tests and a series of analyses of variance were conducted to determine differences in responses based on gender, age, and the experience of the online course. Then, the topic and analytical coding were used to analyse the three open-ended responses. Answers have been coded for classification, and new categories have been emerged, sorted and compared to the development of common themes. The findings of the study indicated that the learner-instructor engagement strategies appeared to be the most recognised of the three engagements. Initial discussions and working together using online communication tools have been identified as the most decisive engagement strategies in the category of learner-learner interaction. Whereas the category of student-instructor engagement, the sending of frequent announcements or email reminders and the provision of grading rubrics for all tasks were most favourable. The findings also showed that preparatory before online class is significant, in term of strategic material planning in order to prepare the students well for online learning.

Shackelford and Maxwell (2012) in their study, 'Contribution of Learner-Instructor Interaction to Sense of Community in Graduate Online Education' identified



the interaction styles in online learning that contributes the most to the students' sense of community, SoC. 1,589 students from 110 faculties in South Central United States participated in the survey. The quantitative research was done with the distribution of the surveys through email. Classroom Community Scale was used to measure the Student SoC, and next, the 32-item Qualtrics survey was used to measure interaction type and frequency. The data were then analysed using Statistical Package for the Social Sciences (SPSS) version 19.0. Finally, using a model from Rovai (2002), Chi-squared analyses were conducted as the final step to study the connection between frequency and importance of the mentioned interaction. It was discovered later in the finding that instructors' play a significant role to guide and encourage interaction between students and themselves as well. An activity like brainstorming that requires participation from all also can be used to trigger continuous interaction in the online class.

### **2.6.3 Past Study in Learner-Content Interaction**

A study by Dixson (2010) examined which interaction channels lead to more engaged students. The research used quantitative design, 186 students from six campuses and 38 courses, and online instructors from two Midwestern universities. Online instructors from two Midwest universities on multiple major and regional campuses were contacted to send the invitation email to complete an online student engagement survey to their students. Meanwhile, the instructors were contacted through a teaching organisation. This study used instruments from the Classroom Engagement Survey (CLASSE) (Smallwood, 2006), the Student Course Engagement Questionnaire (SCEQ) (Handelsman, Briggs, Sullivan & Towler, 2005) and the Rubric for Assessing Interactive Qualities in Distance Courses (RAIQDC) (Roblyer & Wiencke, 2004). The questionnaire items were then divided into groups of activities and ways of communication. An exploratory factor analysis was carried out to validate the calculation of the scale of four types of commitment: skills, emotion, engagement and performance. The findings show that no specific activity encourages students automatically to become more active in online classes. However, the findings indicate that the availability of multiple channels of communication can be linked to better engagement. In addition, learner-learner engagement and learner-instructor engagement are typically closely related to higher student involvement. Besides, learner-learner engagement and learner-instructor engagement, in general, are closely linked to higher student engagement. Therefore, the implication is that online instructors should provide feedback to students to engage in active learning and ensures that meaningful and multifaceted ways of interacting with students are integrated to encourage the learners to interact with one another continuously.

## **3. Methodology**

### **3.1 Research Design**

This study employed the quantitative design. Aliaga and Gunderson (2000) defined quantitative analysis as a description of phenomena by gathering numerical data that are

analysed using mathematically based methods. This work will then use their answers to describe the factors that affect student participation in online learning. Quantitative data were collected using a questionnaire. "The questionnaire is an effective research method, a data collection method" (Oppenheim, 1992:47) since the researchers would gather the findings based on the questionnaires given to the respondents. This research used the survey because it was meant to capture the attention of the respondents and allow them to respond. Milne (1999) claimed that questionnaires are more reliable than interviews as they are conducted systematically. This is also realistic and can be carried out with little impact on its validity and reliability. Vast quantities of data can be obtained from a large number of individuals within a short period.

### 3.2 Population and Sample

55 respondents from a public university who experienced online learning participated in this study and received the same questionnaire via Google Form. This study used cluster sampling, which includes the identification of the cluster of participants comprising the population and their inclusion in the sample community. According to Davis (2005), cluster sampling is useful for researchers because it saves time and resources. Respondents are higher education students as they are currently learning online due to the COVID-19 situation.

### 3.3 Instrument

The questionnaire consists of four sections and overall have 24 items. For section A, four questions are on the demographic information of the respondents. Section B, C, and D are 5-Point Likert scale (1–strongly disagree to 5–strongly agree). Section B is on Learner-Learner Interaction and consisting of six questions. The questions are taken from the past studies by Hu et al. (2008) as cited in Lee et al. (2019); Dikkers et al., (2013); Lewis et al., (2014); Lee et al., (2019); Borup et al., (2014); and Borup, (2016). Section C consisting of seven questions on Learner-Instructor Interaction, taken from the past studies of Gutierrez (2013) and Farid (2014). Lastly, Section D is Learner-Content Interaction. The seven questions were taken from past studies of Banna et al., (2015); Martin and Bolliger (2018); Revere and Kovach (2011); Chou (2000); and Conole (2013).

**Table 1: Cronbach Alpha**

Reliability Statistics	
Cronbach's Alpha	N of Items
.926	20

The value of Cronbach's Alpha is .926. This indicates that there is an excellent level of internal consistency for the scale with this specific sample.

### 3.4 Method of Data Collection

This study has used quantitative methods to collect data on the factors that affect student participation in online learning. The online questionnaires were sent via WhatsApp to 55

higher education students with a consent form seeking their permission to participate in this study and ensuring that their responses were confidential. The questionnaires provided information on the intention of the study. All students are expected to complete the survey. The data is then processed automatically in the online survey service hosted after the responses were sent. Descriptive data analysis was carried out using the data analysis tool provided.

### 3.5 Method of Data Analysis

The data for this analysis were analysed using IBM SPSS Statistics 26. Results from the questionnaires were tallied and calculated into percentages and mean. Then, the responses displayed using tables and charts.

## 4. Findings

### 4.1 Introduction

This chapter reveals the results of research conducted. The demographic profiles of the respondents were evaluated in the first section of the questionnaire. Learner-to-learner interaction was evaluated in the second section, followed by learner-to-instructor interaction, are examined in the third section. Learner-to-content interaction is studied in the fourth section. By using the 5-point Likert scale, the means of statements are analysed. For this analysis, the values correlated with the option of interaction scale questions are as follow 1. Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree and 5: Strongly Agree.

### 4.2 Findings for Demographic Profile

#### 4.2.1 Gender

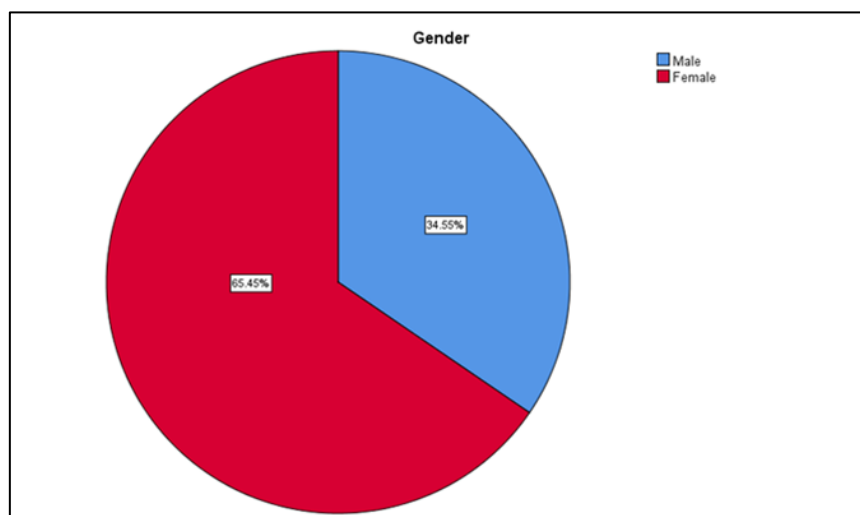
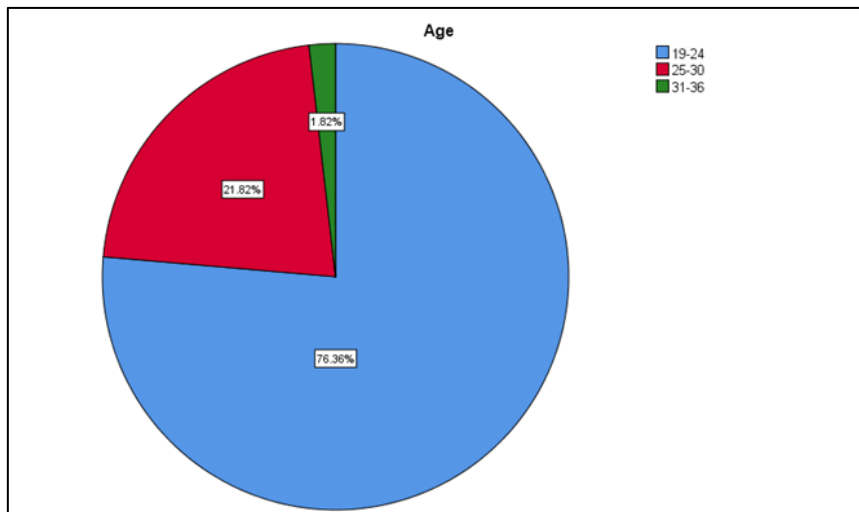


Figure 2: Gender

The results showed that 65.45% of the respondents were female and 34.55% were male.

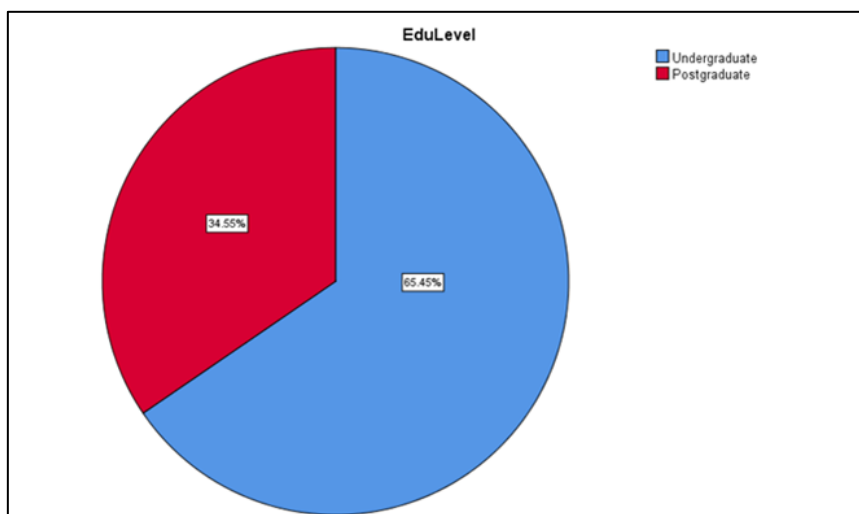
#### 4.2.2 Age



**Figure 3: Age**

The results showed that 76.36% of the respondents were from age 19-24, 21.82% were from age 25-30 and 1.82% were from age 31-36.

#### 4.2.3 Education Level



**Figure 4: Education Level**

The results showed that 65.45% of the respondents were undergraduate students and 34.55% were postgraduate students.

#### 4.2.4 Hours Spent Per Week on Online Learning

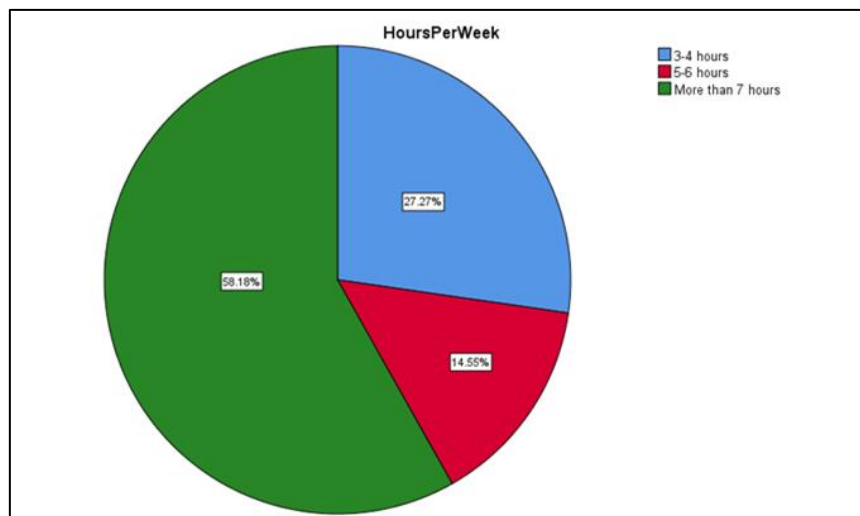


Figure 5: Hours Spent Per Week on Online Learning

The results showed that 58.18% of the respondents spent more than 7 hours per week on online learning, 27.27% were 3-4 hours spent per week and 14.55% of the respondents spent 5-6 hours per week on online learning.

#### 4.3 Findings for RQ1: How does online learning influence learner-learner interaction?

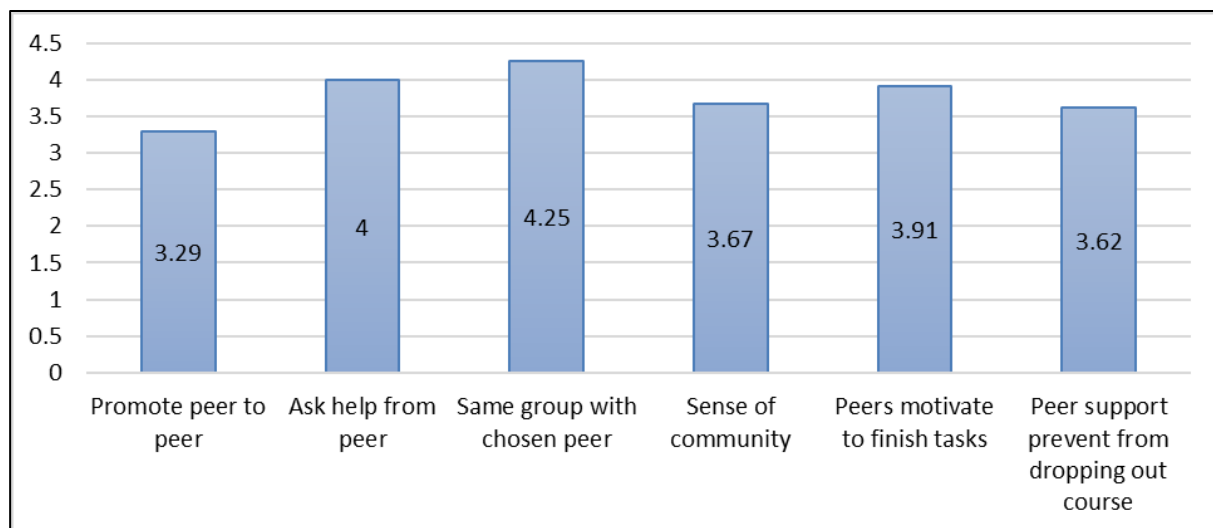


Figure 6: Means for Learner-Learner Interaction

Figure 6 indicates about learner-to-learner interaction in six items of online learning. It gives information about the mean for six items of learner-to-learner. We can see that the item "same group with chosen peer" had the highest mean at 4.25. The item "ask help from peer" had the second-highest mean at 4.00. The items "peers motivate to finish tasks" and "sense of community" followed, with the mean at 3.91 and 3.67, respectively. Next, the item "peer support prevents from dropping out course" also followed at mean 3.62. Lastly, the item "promote peer to peer" had the lowest mean at

3.29. Overall, the data indicate that learner-to-learner interaction was higher in the item "same group with chosen peer", whereas the item "promote peer to peer" had the lowest interaction.

#### 4.4 Findings for RQ2: How does online learning influence learner-instructor interaction?

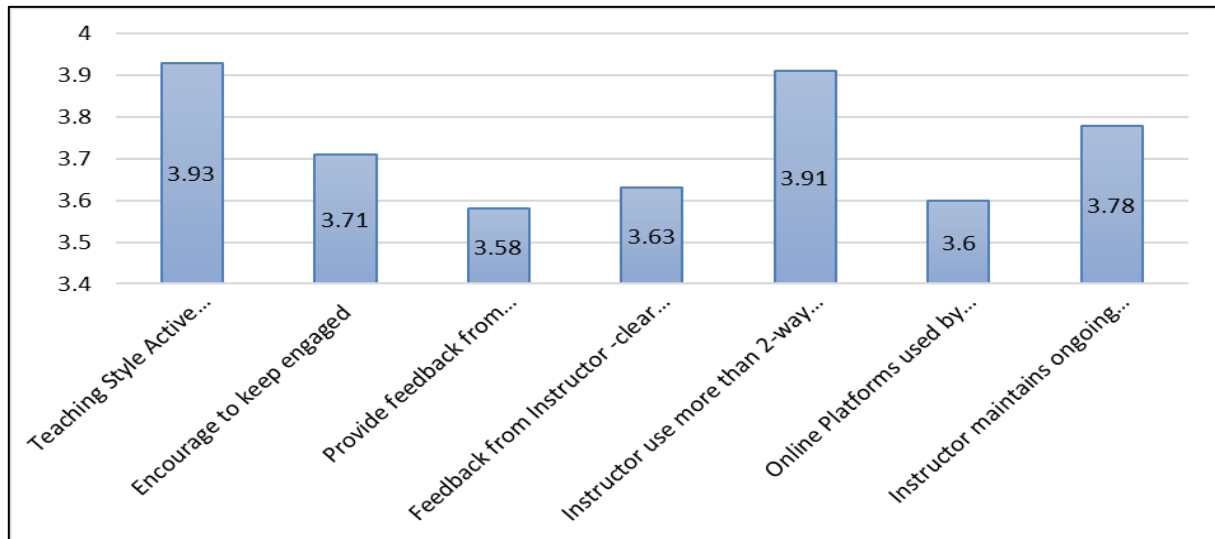


Figure 7: Means for Learner-Instructor Interaction

Figure 7 illustrates about learner-to-instructor interaction in seven items of online learning. It shows the mean for seven items of learner-to-instructor. We can see that the item "teaching style active participation" had the highest mean at 3.93, followed by the item "instructor use more than two-way communication tools" had the second-highest mean at 3.91. Next, for the items "instructor maintains ongoing interaction" and "encourage to keep engaged", with the mean at 3.78 and 3.71, respectively. The item "feedback from instructor-clear and positive" also followed at mean 3.64. The second-lowest mean at 3.60, where the item "online platforms used by instructor effective and convenient" and the item "provide feedback from previous assessment" had the lowest mean at 3.58. Overall, the data indicate that learner-to-instructor interaction was higher in the item "teaching style active participation", whereas the item "provide feedback from previous assessment" had the lowest interaction.

#### 4.5 Findings for RQ3: How does online learning influence learner-content interaction?

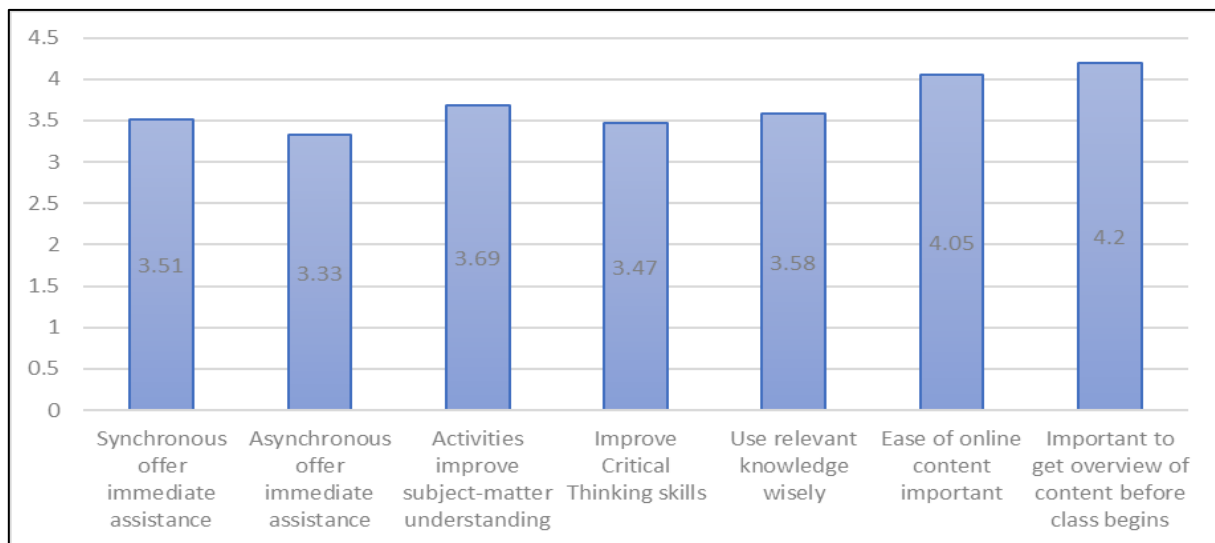


Figure 8: Means for Learner-Content Interaction

Figure 8 explains about learner-to-content interaction in seven items of online learning. It shows the mean for seven items of learner-to-content. The item "important to get overview of content before class begins" had the highest mean at 4.20, and the item "ease of online content important" had the second-highest mean at 4.05. Next, the items "activities improve subject-matter understanding" and "use relevant knowledge wisely" followed, with the mean at 3.69 and 3.58, respectively. The item "synchronous offer immediate assistance" also followed at 3.51. The second-lowest mean at 3.47, is the item "improve critical thinking skills". Lastly, the item "asynchronous offer immediate assistance" had the lowest mean, which at 3.33. Overall, the data indicate that learner-to-content interaction was higher in the item "important to get overview of content before class begins". In contrast, the item "asynchronous offer immediate assistance" had the lowest interaction.

## 5. Conclusion

### 5.1 Summary of Findings

The results of this study were as follows. The research questions looked at an online learning influences of learner-learner interaction, learner-instructor interaction and learner-content interaction. The same group with peers, ask help from peers motivate to complete the task contributed more to learner-learner instructions. Next, teaching style active participation, use more than two-way communication tools, and instructor maintains ongoing interaction dominated learner-instructor interactions. Get an overview of content before class, ease of online content important and activities improve subject-matter understanding was the most item contributing to learner-content interactions. The previous study showed that the three types of engagement strategies were critical in online courses. According to Bolliger and Martin (2018), the involvement

of learner-instructor plays a crucial role in enhancing the interactive design and facilitation of online courses. It was also supported by Muncundayi (2019) that the participation of learners in online courses must be one of the main objectives of the instructors. Thus, learner-instructor interactions are an essential part of this engagement in online learning.

## 5.2 Discussions

The findings revealed that three essential teaching and design strategies have an impact on learners in their online learning. First, learner-to-learner interactions have shown that creating a true sense of learning by the community has motivated learners to engage in online learning. According to Mucundanyi (2019), a true sense of learning community was to connect with peers. This study shows that connecting with peers, helping and supporting peers was the most important thing that contributed to a real sense of learning community. Connecting with classmates, such as group work will create an opportunity for learners to work together. Learners tend to know each other and working together through various synchronous and asynchronous platforms. In addition, instructors may develop guidelines and designs for learners to work in a group. Moreover, the instructor may set up a medium for learners such as discussion boards, to receive assistance and support from their peers who are more knowledgeable in the class. Thus, learner-to-learners motivated each other to engage in their online learning.

Secondly, clear communication helps learner-to-instructors engage in online learning. Involvement of instructors contributes to clear communication for learners to engage in online learning. Instructors need to design online courses and teaching styles to communicate with learners. The design and facilitation of online courses could make it easier for students to engage in simple, easy-to-understand learning. A well-organised of the online course and clear guidelines have played an essential role for learners to communicate online. It will also connect learners and instructors to online learning. Besides, instructors need to take into account that learners have different platforms to deliver to them.

Lastly, time management is the key to online learning to keep learner-to-content interaction engaged. This study found that learner self-organisation was the main contributor to time management, and instructors may develop strategies to guide their students in self-organisation (Mucundanyi, 2019). Learners need to allocate their time to online learning consistency, as they need time to get to know and understand the course before the class begins. Moreover, learners need to be consistent in using time online as they do not have the assignment to do, but they may use the time for other learning activities. Time management is therefore quite challenging for learners, but a well-organised allocation for assignment, reading and other learning activities may help them.

## 5.3 Pedagogical Implications

The results of this study will allow and help students in online learning. The results have shown that a true sense of learning community and time management engages learners in online learning. First, learners need to communicate well with their peers and



instructors. Being an online learner does not mean to be alone in learning. After that, learners also need to manage their class-related time and other obligations. The learner may set up a schedule to plan their own specific time for reading, revision, assignments such as group work and more. Also, the instructors need to design teaching styles and online courses that keep more students engaged. Instructors must first take into account the design of online learning with the learners. The instructor also may create a learning community that encourages learners to participate actively in class, such as creating discussion boards, providing feedback and more. Therefore, online learners and online instructors need to find solutions to better engage learners in online learning.

#### 5.4 Suggestions for Future Research

Several limitations need to be mentioned, which could be helpful to other researchers who want to replicate this study or carry out similar studies. This study used the Google Form questionnaire to collect the data. Future researchers may restrict the number of Internet Protocol addresses in order to prevent the questionnaire from being completed more than once. A small sample of the group was used in this study. Future researchers may devote more time to data collection and allow many students to volunteer for this study. It would be better, given the current situation for students to have their first online learning courses at the university. Future practitioners could analyse additional engagement items not included in the questionnaire to collect the data in the future study. Respondents who have not used or experienced some of these items may then rate the survey questions at a lower level. Due to these limitations, the results need to be interpreted correctly as the results should be analysed in various settings and contexts in a controlled way. Lastly, the future study may also explore faculty and higher education perceptions of engagement strategies. These must be taken into consideration so that better online courses could be designed to enhance performance in online classroom.

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