INDONESIAN JOURNAL OF APPLIED LINGUISTICS
Vol. 12 No. 3, January 2023, pp. 634-653

Available online at:
https://ejournal.upi.edu/index.php/IJAL/article/view/46035

https://doi.org/10.17509/ijal.v12i3.46035

Investigating university student engagement in online learning: A case study in EFL classroom

Ignasia Yuyun
Department of English, Faculty of Humanities and Social Sciences, Universitas Kristen Krida Wacana, Jalan Tanjung Duren Raya No. 4 Jakarta Barat 11470, Indonesia

ABSTRACT

The COVID-19 pandemic outbreak inevitably impacts teaching and learning activities worldwide. Online learning has been universally applied in education, including in higher education. In an online setting, student engagement plays a pivotal role in classroom as it identifies critical elements of the learning process that can increase learning and outcomes. However, there is a question about whether student engagement between synchronous and asynchronous online classrooms is indistinguishable. Therefore, this study investigates student engagement in a synchronous and asynchronous online classroom, particularly in an Indonesian English as a Foreign Language (EFL) context. A Likert-scale questionnaire and classroom observation (synchronous and asynchronous) were used to gather the data from 26 university students in a sample of EFL teaching in an Indonesian context. The study encompasses five elements of online engagement: social engagement, cognitive engagement, behavior engagement, collaborative engagement, and emotional engagement. The prominent finding has revealed that university student engagement in online learning has different significance levels. Most students are more involved in synchronous online activities as they can interact with their professors and peers in real time. Synchronous and asynchronous learning provide substantial and comparable results. This study implies that synchronous and asynchronous activities should be incorporated into online learning to get more engaging interaction among students. It is expected to contribute to the growing literature on the student-teacher dynamic in online education. Further research could explore student engagement in online learning from other perspectives, such as the teacher's perspective and the use of learning media.

Keywords: EFL classroom; online learning; students' engagement

First Received:	**Revised:**	**Accepted:**
18 May 2022	30 November 2022	8 December 2022
Final Proof Received:		**Published:**
27 January 2023		31 January 2023

How to cite (in APA style):
Yuyun, I. (2023). Investigating university student engagement in online learning: A case study in EFL classroom. *Indonesian Journal of Applied Linguistics*, *12*(3), 634-653. https://doi.org/10.17509/ijal.v12i3.46035

INTRODUCTION

During the pandemic, online classrooms are essential for teaching and learning. A sudden shift has become a new normal in teaching and learning at any level of education worldwide. Hence, the new normal incorporates synchronous and asynchronous classroom activities in higher education. These types are commonly used in online learning with various variables, such as communication tools, feedback types, input methods, collaboration modes, and targeted skills (Xie et al., 2018). Thus, synchronous and asynchronous classes benefit from technology integration.

Synchronous and asynchronous learning tools provide several benefits. These technologies promote student-teacher interactions, student engagement, and learning expectations (Fabriz et al., 2021; Harris et al., 2009; Simonson et al., 2015). Some students prefer synchronous online learning environments since they need direct instruction to get a more engaging dynamic between teacher-and-student and student-to-student. Group discussion

* Corresponding Author
Email: ignasiayoen@gmail.com

improves students' skills (Ogbonna et al., 2019); and their ability to communicate and collaborate effectively for discussing complex ideas or deep reflection (Fabriz et al., 2021). It allows students to ask questions and debate over answers. In contrast, an asynchronous online learning environment is more flexible and convenient. It provides teaching or training at scale, reinforces learning activities, and gives more learner control. Since learning types have unique benefits and limitations to online learning, this study explores two learning types that should be integrated and utilized to support student engagement within an online learning environment.

Despite the advantages and benefits, synchronous and asynchronous learning also contain some disadvantages and challenges. For instance, synchronous learning provides students same learning pace, paying less attention, and dependence on instructor's quality (Lim, 2017, as cited in Xie et al., 2018). In addition, students face inflexibility, internet connection, and demand for careful planning (Lin & Gao, 2020; Vidhiasi et al., 2021). On the other hand, in asynchronous learning, students face promptly accessible answers, less motivation (Lim, 2017 in Xie et al., 2018), lack of personal interaction, and demand for self-discipline (Vidhiasi et al., 2021). In addition, students have indirect social relations in online learning settings (Lin & Gao, 2020).

The recent trends are challenging for teachers to support knowledge construction or provide a learning context that nurtures student engagement (Omar et al., 2012). Teachers must create various activities to engage students in online synchronous and asynchronous learning. Student engagement is essential in online learning since students can perform effectively by engaging in online learning (Hu & Li, 2017; Martin & Bolliger, 2018). In addition, student engagement is an essential indicator of quality in the higher education (Brown et al., 2020) and significantly affects learning outcomes (Chen et al., 2010, as cited in Redmon et al., 2018). Therefore, it is imperative to put forward student engagement in the online learning environment, particularly in the university context. This study aims to reveal five elements of student engagement (see Anjarwati & Sa'adah, 2021; Kew & Tasir, 2021; Xu et al., 2020). The context of synchronous and asynchronous online activities in English as Foreign Language (EFL) class has not yet been further addressed thus far.

Review of Literature

Online Learning in Higher Education

A rising number of studies on online learning suggests that interaction among students, knowledge, and teachers is critical in creating an engaging and interactive class (Bond & Bedenlier, 2019; Dwivedi et al., 2019; Hollister et al., 2022; Rapanta et al., 2020; Xu et al., 2020). Learner-teacher-content interaction is also called a microsystem technology-enhanced learning environment (Bond & Bedenlier, 2019). It eventually creates flexibility in online learning (Anderson, 2009). In higher education, online learning is obviously more flexible than in other education levels due to the curriculum's breadth and flexibility (Jung et al., 2019; Sari, 2020). Therefore, online learning is the potential to build educational opportunities for individuals who may have faced incomparable boundaries prior to the expansion of online educational programs (Gilbert et al., 2015).

Figure 1

A model of online learning showing types of interaction (Anderson, 2009)

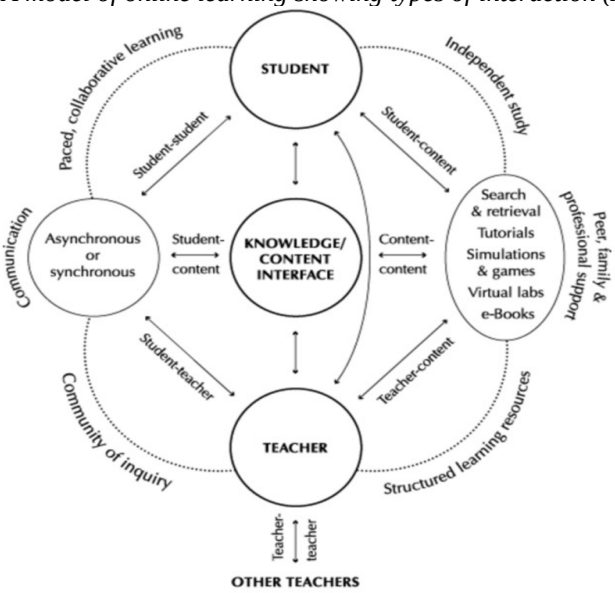


Figure 1 depicts Anderson's (2009) model and illustrates the two prominent human actors (learners and teachers) and their interactions (with each other and content). Learners can interact directly with multiple online formats (Xiao, 2017) and have their learning sequenced, directed, and evaluated with teacher's support. The interaction occurs within a community of inquiry, using a variety of internet-based synchronous and asynchronous activities (video, audio, computer conferencing, chats, or virtual world interaction). These environments are vibrant. It allows for social skills, the collaborative learning of content, and the development of personal relationships among participants. However, the community binds learners in time, forcing regular sessions or group-paced learning. The second learning model (on the right) illustrates the structured learning tools associated with independent learning. Standard tools in this mode include computer-assisted tutorials, drills, simulations, and virtual labs. Printed or online texts have long been used to convey teacher's interpretations and insights in independent studies. However, student can independently collaborate with colleagues, peers, and family members.

Synchronous Learning

Corresponding to Anderson's (2009) model, the interaction occurs within a community of inquiry using a variety of net-based synchronous and asynchronous activities. The learning environments offer relevant interactions in a face-to-face setting and are known as synchronous learning environments (Bond & Bedenlier, 2019; Phelps & Vlachopoulos, 2020; Simonson et al., 2015). Synchronous learning technologies support learning and teaching by offering multiple ways of interacting, sharing, and collaborating in real time by means of videoconferences, webcasts, interactive learning models, and telephone conferences.

Some factors succeeding in the interaction in online synchronous learning include student engagement, synchronous collaboration, and instructional pacing. First, students must engage in synchronous activities to succeed in online learning. Next, interaction and collaboration are significant factors in successful learning outcomes (Abdous & Yen, 2010; Dwivedi et al., 2019; Martínez-Caro, 2011) with the assistance of teachers. Teachers play a pivotal role in facilitating, guiding, and motivating the learner (Abou-Khalil et al., 2021; Anjarwati & Sa'adah, 2021; Bond & Bedenlier, 2019; Dwivedi et al., 2019; Hollister et al., 2022; Malkin et al., 2018); Xu et al., 2020). Last, students can express their thoughts without judgment or interruptions, feel more flexible, and experience personalized learning opportunities (Lorenzo & Ittelson, 2005; Xie et al., 2018) to provide advanced educational opportunities for the learning needs of individual students. Notably, the synchronous mode instills a sense of community through collaborative learning (Lin & Gao, 2020; Perveen, 2016).

In the Indonesian EFL context, synchronous online learning offers strengths and weaknesses. Cahyani et al. (2021) reveal some strengths of synchronous online learning. They are authentic learning activities, flexible learning, live interaction, and a student-centered learning process. In contrast, it also possesses weaknesses regarding accessibility, developing critical thinking, proficiency in topics, an enjoyable class, connection issues, and network issues. Interestingly, synchronous and asynchronous learning methods achieve good categories regarding material aspects, active learning, learning motivation, and dialogue quality (Anugrah et al., 2021).

Asynchronous Learning

In asynchronous learning, promptly accessible materials are available and are used at the student's pace (Raymond et al., 2016; Xie et al., 2018). For instance, there are audio/video lectures, handouts, articles, and PowerPoint presentations (Perveen, 2016). The rapidly growing technological advancement and online connections support asynchronous learning and allow more time for student reflection, collaboration, and student-to-student interactions (Bond & Bedenlier, 2019; Xie et al., 2018). For example, Learning Management System (LMS) can indirectly influence student engagement (Ahshan, 2021; Barua et al., 2018; Garbrick, 2018) through learning activities and expectations that require students to create, synthesize, explain, and apply the content or skills taught.

Similar to synchronous learning, successful asynchronous learning is influenced by some factors, such as clear learning objectives, support from peers and teachers, and various interactive learning activities. First, students thoughtfully consider learning objectives because they can critically synthesize their learning through asynchronous collaboration (Bond & Bedenlier, 2019; Tathahira, 2020; Xie et al., 2018). In this activity, teacher facilitates a sense of community (Lin & Gao, 2020). In addition, asynchronous e-learning scaffold students' previous knowledge with new concepts (Perveen, 2016). It also allows students actively participate by interacting with their peers and providing peer feedback (Harris et al., 2009; Simonson et al., 2015). Ultimately, asynchronous space leads to self-paced, independent, student-centered learning (Perveen, 2016), highly self-reflective, and more objective and reflective (Garrison & Kanuka, 2004). Hence, various interactive learning activities are highly suggested to enrich student products and portfolios, student-and-teacher collaboration, and learner-specific pacing geared to the individual student

needs and promote higher-order thinking skills (Osborne et al., 2018; Tathahira, 2020).

In the Indonesian context, some strengths of asynchronous online learning are revealed, such as authentic learning activities, flexible learning, accessibility, the development of critical thinking, and student-centered learning (Cahyani et al., 2021). However, Indonesian higher education also faces some challenges of asynchronous online learning, such as a lack of interaction, low mastery of content, dull classes, connection issues, and network issues (Cahyani et al., 2021). Therefore, a hybrid synchronous and asynchronous model can be an alternative, for example, in teaching writing for higher education (Tusino et al., 2021).

Student Engagement Framework

Following Hu and Li (2017), student engagement in this study refers to student involvement, learning involvement, and learning participation. In the university context, Krause (2005, as cited in Redmond et al., 2018) explains that student engagement refers to the time, energy, and resources students devote to activities designed to enhance learning at the university.

Some previous studies (Anjarwati & Sa'adah, 2021; Kew & Tasir, 2021; Xu et al., 2020) focused on one or three elements of student engagement. This study employed the online engagement framework proposed by Redmond et al. (2018) as the foundation (see figure 2). There are five elements of the student engagement framework, including social engagement, behavioral engagement, cognitive engagement, collaborative engagement, and emotional engagement.

Figure 2

Online Engagement Framework Overview

Table 1

Online Engagement Framework for Higher Education

Online Engagement Element	Indicators
Social engagement	Building community
	Creating a sense of belonging
	Developing relationships
	Establishing trust
Cognitive engagement	Thinking critically
	Activating metacognition
	Integrating ideas
	Justifying decisions
	Developing deep discipline understanding
	Distributing expertise
Behavioral engagement	Developing academic skills
	Identifying opportunities and challenges
	Developing multidisciplinary skills
	Developing agency
	Upholding online learning norms
	Supporting and encouraging peers
Collaborative engagement	Learning with peers
	Relating to faculty members
	Connecting to institutional opportunities
	Developing professional networks
Emotional engagement	Managing expectations
	Articulating assumptions
	Recognizing motivations
	Committing to learning

The online engagement framework for higher education presented in Table 1 summarizes the elements and indicators. Redmond et al. (2018) claim that the rise of the framework is from a social constructionist perspective in higher education, promoting individual and group learning through asynchronous and synchronous group discussions. It is not hierarchical or linear, nor is each element meant to be explored as an isolated process. Instead, the framework provides a tool to unpack the dynamic nature of online engagement.

Firstly, social engagement includes academic and non-academic activities outside the virtual classroom. For instance, students do recreation or social functions and discussions of a social nature (Coates, 2006, as cited in Redmond et al., 2018) to establish purposeful relationships with others. Social engagement is crucial when students are required to work with peers for assessment and learning tasks. It is related to social-emotional buy-in and social interactions (Sinha et al., 2015, as cited in Redmond et al., 2018).

Secondly, as cited by Redmond et al. (2018), cognitive engagement is related to deep learning strategies, self-regulation, and understanding (Bond & Bedenlier, 2019). In addition, students practice

their higher-order thinking skills and promote learning (Fredricks et al., 2004). It is also associated with learning motivation, values and beliefs, metacognition and self-regulation, and strategy use and effort (Fredricks et al., 2004; Greene, 2015).

The next is behavioral engagement, which has three dimensions of positive behavioral engagement: (1) adhering to rules and norms, asking questions, contributing to discussions, and paying attention (Bond & Bedenlier, 2019); (2) active participation in academic activities; and (3) participation in extracurricular or non-academic activities within the educational institution (Fredricks et al., 2004). Behavioral engagement is also referred to as academic engagement (Al Mamun & Lawrie, 2021; Pittaway & Moss, 2014), agency engagement, learning presence (Shea et al., 2012), self-regulating behaviors (Cheng et al., 2013), skills engagement, and verbal and nonverbal attentiveness.

The fourth is collaborative engagement. The engagement is related to the development of different relationships and networks that support learning, including collaboration with peers, instructors, industry, and the educational institution. Redmond et al. (2018) mentions similar concepts of collaborative engagement from some literature, such as professional engagement (Pittaway & Moss, 2014), peer learning (Bond & Bedenlier, 2019), faculty experience, campus involvement, and enrichment of educational experience.

Finally, emotional engagement refers to students' reactions to the learning process related to their feelings or attitudes toward learning. It includes emotional reactions to peers and teachers, the educational institution, the subject matter or discipline, or the students' tasks. Emotional engagement covers interests, values, and emotions (Fredricks et al., 2004). Emotion facilitates the activation of attention and engagement (Sinatra et al., 2015). It also plays an essential role in student adjustment to the role of the online learner. Therefore, online instructors should determine control of emotion for effective learning and teaching (Cleveland-Innes & Campbell, 2012). Some other terms for emotional engagement are, among others, personal engagement (Pittaway, 2012), emotional presence (Cleveland-innes & Campbell, 2012), affective reactions (Fredricks et al., 2004), and psychological engagement (Vogt, 2016).

METHOD

Design

This study applied a mixed research method since it has a smaller sample size of qualitative data, which is not generalizable. In addition, to support the contextualization of this study, mixed methods were used to gain a complete picture of findings in context and add richer detail to conclusions. A mixed research method implements qualitative and quantitative methods to understand the phenomena qualitatively and explain them through numbers and charts (Creswell, 2018). The study is a case study, which aims to analyze the students' engagement in online learning, mainly the occurrence of students' engagement in synchronous and asynchronous class activities. To complement the result of the case study, numbers and charts, as the result of the questionnaire, were used to support the data, primarily to determine students' engagement in classroom.More to the point, the study used triangulation to ensure a rich result and to increase the reliability of findings (Noble & Heale, 2019). In practice, the study used classroom observation, questionnaires, and document analysis to answer the research question.

Research Context and Participants

This study took place in an Indonesian university, taking its English Education Study Program. The study used the Classroom Discourse Analysis course. This sample of the classroom was purposively selected based on the nature of students, who are senior students. This group of students is reliable in completing the questionnaire since they have been exposed to various teaching and learning activities for three years. Their experience helps them compare their previous participation in on-site and online classrooms.In addition, the Classroom Discourse Analysis course was selected because it has a natural synchronous and asynchronous classroom setting. The lecturer used a video conference platform (Zoom) for synchronous meetings and a Learning Management System (LMS) for asynchronous meetings. A WhatsApp group was used throughout the semester. Regarding ethical considerations, the participants were notified about the objectives of the study. They went through the questionnaire before answering it. They were also assured that their personal data will be kept entirely confidential.

Data Collection Instruments

The study adopted an online engagement framework for Higher Education developed by Redmond et al. (2018). Likert scale questionnaire, classroom observation, and document analysis were used to collect data. First, a non-participant classroom observation was conducted in a real-time classroom.In this fashion, the researcher acted as an outsider who did not actively participate in the classroom activities. The observation was conducted synchronously through a zoom meeting, recorded four times, and asynchronously by video viewing. This study observed two classes using field notes, observation sheets (see Appendix 1 and 2), and a video recording. The instrument of observation is the same as the questionnaire in Appendix 8. Next, all participants received the Likert scale

questionnaire via Google Forms following the ethical considerations. The questionnaire determined how students perceived online engagement in synchronous and asynchronous classroom activities. The framework of the questionnaire follows Redmond et al. (2018), as seen in Figure 1. Finally, the supporting documents complemented the other two data taken from the teaching administration documents, including lesson plans, syllabi, notes of the teachers, and student assignments. The documents were shared through WhatsApp and GDrive.

Data Analysis

The data collected were then analyzed according to their nature and function. The primary data, i.e., classroom discourse, as observed online and recorded in the teaching-learning process recordings, were then analyzed using Redmond et al.'s framework. First, classroom observation and document review were analyzed qualitatively through and after entirely collecting the data using Thematic or Coding Analyses (Creswell, 2015; Miles et al., 2014). The accumulated valid and reliable data were systematically transcribed and organized before the coding process. The coding involved file naming and data grouping. The following step was data selection for further analysis and its thematic categorization based on Redmond et al. (Table 1). The final stage of qualitative analysis was to synthesize the entire coding and conceptualization process of the study themes. The processes of data processing, coding, and conceptualization were explored in accordance to the research objectives. Next, descriptive statistics were used to examine the quantitative data collected from survey responses to determine the frequency and mean score for each questionnaire item. The mean score on the Likert scale was then categorized using the categorization technique developed by Riduwan (2019). Table 2 summarizes the categorization. The steps for analyzing the questionnaire are explained in Appendix 9 to give more precise ideas of the data analysis process.

Table 2

Criteria for Descriptive Analysis of the Percentages

Interpretation	Range of Percentage
Very insignificant	0-20%
Insignificant	21%-40%
Enough	41%-60%
Significant	61%-80%
Very significant	81%-100%

FINDINGS

The first analysis covered the data based on the framework of Redmond et al. Synchronous activities are observed through video recordings of classroom observation. On the other hand, asynchronous activities are evaluated from document analysis, such as lesson plans, syllabi, notes of the teachers, and student assignments. Subsequently, the second analysis used Redmond et al.. The second analysis focused on the students' engagement in the synchronous and asynchronous classroom based on the student's point of view. This part supports the result from the classroom observations and document analysis. The data is generated from a Likert questionnaire of twenty-six participants. Then, the data recapitulation, the percentage, and the mean of the data are counted with the formula from Riduwan (2019).

Social Engagement

Social engagement includes four indicators: building community, creating a sense of belonging, developing relationships, and establishing trust. In general, social engagement occurs during synchronous and asynchronous meetings. In building community, shreds of evidence were identified as the first indicator, such as using virtual real-time (synchronous) via zoom meetings and discussion forums. The most frequent activity was a discussion forum where students could share their thoughts on a particular topic. In this activity, the lecturer voluntarily nominated students to express their opinions, as seen in Appendix 1. The students worked individually during the synchronous meetings to do the learning tasks since the zoom breakout room was unavailable. In asynchronous activities, shreds of evidence were also identified. For example, students were assigned to work in groups of 4 or 5; and did a synchronous meeting via meeting platforms such as Google Meet, Zoom, or WhatsApp video calls for group works. In addition, lecturers and students used the WhatsApp group to communicate.

Turning to the second indicator, being on time for the zoom meeting was an example of creating a sense of belonging in synchronous meetings. Yet, submitting assignments on time and working in the same groups for some meetings are examples of a sense of belonging in asynchronous activities. As for the third indicator, some evidence occurred during synchronous meetings regarding developing relationships. To illustrate, students and lecturer developed relationships through greetings, question-answer sessions, and discussions. Students also communicated well with peers and the lecturer directly or via chat box, mainly when the lecturer and students had technical problems or left the meeting room. Instead, in asynchronous activities,

students developed relationships via WhatsApp group to work in groups of 4 or 5 and record their group discussion via video conference using Google Meet, Zoom, or WhatsApp video calls.

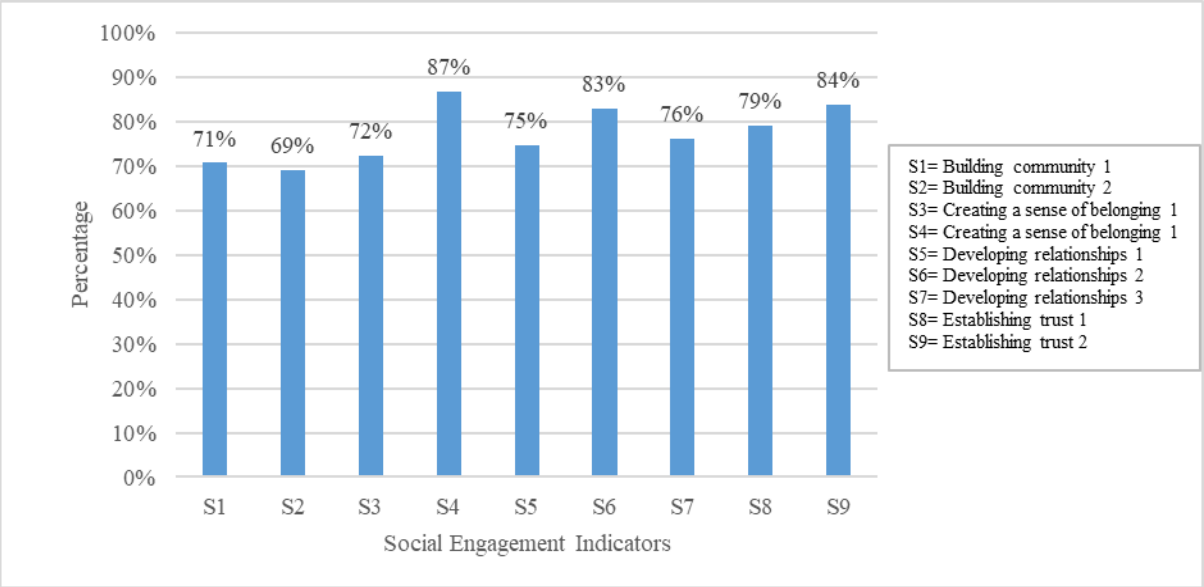
Regarding the last indicator, the lecturer and students understood and communicated well to establish trust. The lecturer allowed late students to join the class but did not consider their attendance. Another notable example is that the lecturer allowed students to find various resources for asynchronous tasks and assignments.

The questionnaire result, coded in Appendix 3 and depicted in Figure 3, shows that all percentages of social engagement indicators are from 69% to 87%. It is significant (61-80%) and very significant (81-100%). Regarding building community, the students significantly work with peers for assessment and learning tasks and use social forums such as social media platforms. Creating a sense of belonging during online learning is also a significant result. It is evident when the students utilize LMS, WhatsApp group, or other platforms to connect with lecturers and peers. Indeed, they generate a strong sense of belonging when working in a group.

Online learning prominently helps students build relationships with peers and lecturers as it promotes positive interdependence and group cohesion. Students' communication with peers and lecturers via phone calls, email, WhatsApp, or other text message platforms is very essential. In establishing trust, the students significantly trusted their peers in groupwork. They also understood their peers well; and were able to communicate well with their peers.

Figure 3

The percentage of Social Engagement



Cognitive Engagement

Cognitive engagement includes six indicators: thinking critically, activating metacognition, integrating ideas, justifying decisions, developing deep discipline understandings, and distributing expertise. Overall, cognitive engagement occurs during synchronous and asynchronous meetings.

For instance, the lecturer gave an analysis task to identify exchange categories, as seen in Figure 5. Some students participated actively during the synchronous discussion by volunteer or nomination. In asynchronous activities, students were assigned to discuss the exchange categories, count the number of each kind of exchange, and put them in a single table with few columns and rows. In addition, they were assigned to find literature on Bloom's Taxonomy. Then, their transcripts identify students' responses in the scripts (calculate C1, C2, C3, …, A1, A2, A3, …, P1, P2, P3, …). These examples provide strong empirical evidence of thinking critically.

To activate students' metacognition, as the second indicator, students participated in the synchronous discussion and responded to the lecturer's questions by volunteer or nomination. During the task, the third and fourth indicators were identified. Students integrated ideas during tasks and assignments based on their readings and information from the lecturer, references, and peers. Thus, students practiced integrating ideas. After the reading task, during asynchronous activities, students justified information based on the references they had read and listened to before answering questions or delivering their thoughts in synchronous meetings. On the other hand, activating students' metacognition in asynchronous activities could be seen similarly through the analysis task. Students were assigned to choose one

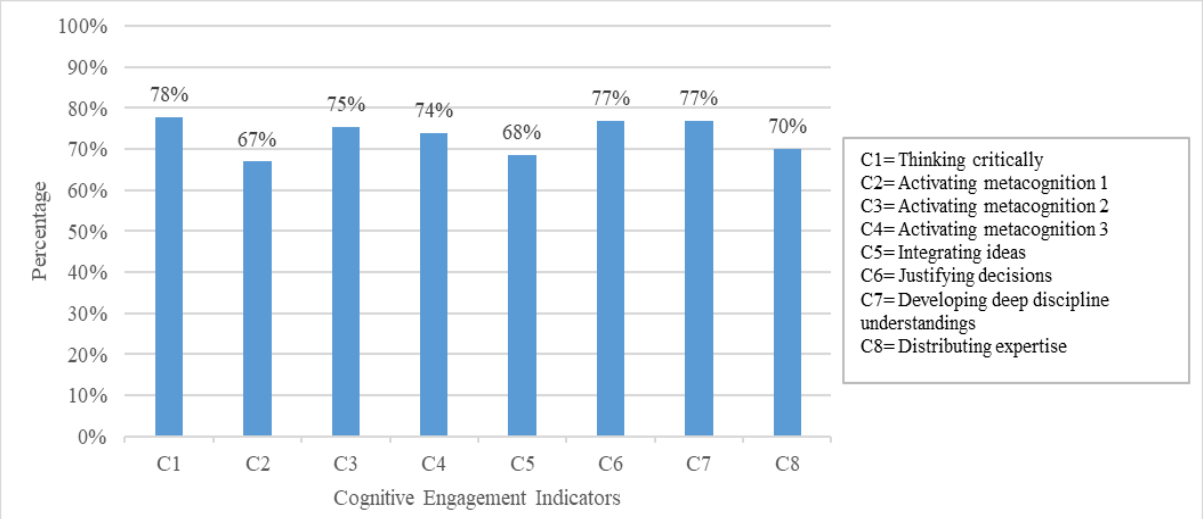
transcription as the material of their group discussions and label the chosen classroom discourse with their peers in the group during a recorded group discussion. This task serves to illustrate that students practiced justifying decisions during group discussions.

A realization of the fifth indicator was found when students shared their thoughts during question-answer and discussion in synchronous and asynchronous meetings to practice distributing expertise. Unfortunately, the last indicator, developing deep discipline understanding, could not be seen from the class observation synchronously and asynchronously.

The questionnaire result, as coded in Appendix 4 and illustrated in Figure 4, demonstrates that all percentages of cognitive engagement indicators are from 67% to 78%. It is significant (61-80%). The highest is the students critical thinking about what they have read, learned, searched, and discussed with their peers and lecturer. Conversely, the lowest is their metacognitive strategies to plan, monitor, and evaluate their cognition to accomplish tasks.

Figure 4

The percentage of Cognitive Engagement



Behavioral Engagement

In behavioral engagement, there are six indicators: developing academic skills, identifying opportunities and challenges, developing multidisciplinary skills, developing agency, upholding online learning norms, and supporting and encouraging peers (Redmond et al., 2018). In most cases, behavioral engagement occurs during synchronous and asynchronous meetings. Students developed their academic skills by reading references, doing assignments and tasks, and sharing their thoughts in the discussion. Equally, it also occurred in asynchronous activities. Students developed their academic skills by reading references and answering questions given in LMS. Notably, students were required to plan, manage, complete, and submit assignments on time in asynchronous activities.

In identifying opportunities and challenges during synchronous activities, students identified opportunities when they responded to questions voluntarily. Furthermore, students identified challenges when they did assignments and tasks. For example, they identified and coped with technical problems and challenges during the learning process, such as internet connection or other technical problems. The lecturer also facilitated students' opportunities and challenges for their analysis tasks. Hence, students practiced being more independent and self-regulated through asynchronous activities, particularly individual tasks.

Through the synchronous activities, students established their motivation, hope, self-efficacy, and growth mindset by participating in the whole session of Zoom meeting. Their active participation was shown clearly during the synchronous meetings. In terms of supporting and encouraging peers, students responded and supported their peers' opinions in the discussion. In this regard, they showed active participation in the discussion. Students also followed procedures during synchronous learning, so a smooth class occurred. In comparison, students developed their agency by doing and completing individual assignments during asynchronous activities, such as analysis tasks and reading journal articles.

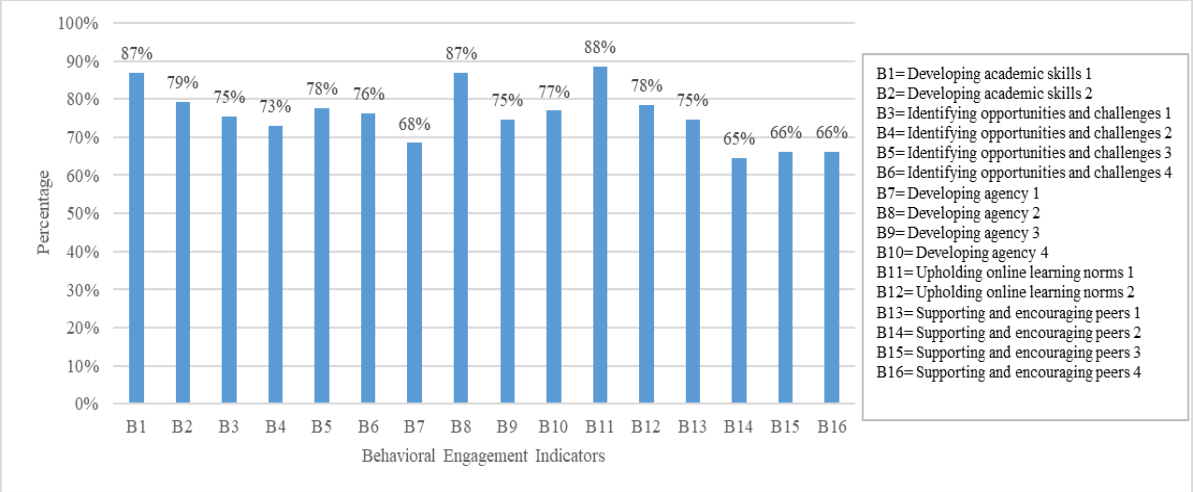
Turning to upholding online learning norms, some activities were also observed in synchronous and asynchronous activities. In this case, the lecturer consistently reminded students about university values and ethics, classroom codes, and conduct, such as camera use, tardiness, and asking permission. Moreover, the students supported and

encouraged peers by following procedures during asynchronous learning. Remarkably, they suggested distributing the chapter to each group member during the reading task. A respective member was expected to write a report on the chapter based on the data from the respective group transcript. This activity also showed that the students encouraged peers to complete academic tasks. The students also encouraged peers to actively participate in learning by responding to and supporting their peers' opinions during discussions. However, there was no data that students encouraged peers to reduce disruptive behaviors in synchronous and asynchronous activities. Among all indicators of behavioral engagement, class observation could not show students multidisciplinary skills development.

The questionnaire result, as coded in Appendix 5 and seen in Figure 5, reveals that all percentages of behavioral engagement indicators are from 65% to 88%. It is significant (61-80%) and very significant (81-100%). The highest is upholding online learning norms, mainly when students come to synchronous meetings on time. On the other hand, the lowest is supporting and encouraging peers. Particularly, the students encourage peers actively to participate in the learning process. The most significant results occurred in three indicators. Initially, students mainly did academic reading, writing, and listening through synchronous and asynchronous activities to develop academic skills. Then, they developed agency, particularly when they learned something new from synchronous and asynchronous learning. Finally, they upheld online learning norms during the synchronous meeting.

Figure 5

The percentage of Behavioral Engagement



Collaborative Engagement

Collaborative engagement includes four indicators: learning with peers, relating to faculty members, connecting to institutional opportunities, and developing professional networks. Overall, collaborative engagement occurs during synchronous and asynchronous meetings. To illustrate, students learned with peers through forum discussion and shared their reading or analysis results in synchronous meetings. Notwithstanding study groups and group tasks were conducted in synchronous meetings, learning with peers was not observable. As for students related to the faculty member was evident when they communicated with the lecturer in synchronous and asynchronous meetings. However, there were two unidentified indicators in the synchronous and asynchronous meetings: connecting to institutional opportunities and developing professional networks.

Concerning the questionnaire result, as coded in Appendix 5 and seen in Figure 6, displays that all percentages of collaborative engagement indicators are from 59% to 87%, which means enough (41-16%), significant (61-80%), and very significant (81-100%). The highest is when students learn with peers through study groups and group tasks or assessments, and the lowest is when they connect to institutional opportunities by being involved in a campus environment. This indicator was the lowest significance among all engagement elements and indicators.

Emotional Engagement

Emotional engagement includes four indicators: managing expectations, articulating assumptions, recognizing motivations, and committing to learning. As a rule, emotional engagement occurs during synchronous and asynchronous meetings. In managing expectations, students value their learning process or acquire knowledge and skills through positive behavior, such as punctuality, being on camera, active involvement in the QA and discussion (either volunteer or nomination), and using time wisely to do the tasks. Students also

appreciate the success of the learning process through their enthusiasm and interest. They showed that they recognize their motivation and commitment to learning process. From the synchronous meetings, there was one unidentified indicator: articulating assumptions. This indicator deals with whether the students work harder than they thought during the learning process.

In asynchronous activities, students had to submit group work results and discussion recordings via GDrive and write a report. The activities trained students to manage expectations. By completing all individual and group assignments, students could recognize their motivations as they were interested in the learning process. Moreover, punctuality in task submission also showed their commitment.

The questionnaire result, as coded in Appendix 5 and illustrated in Figure 7, shows that all percentages of emotional engagement indicators are from 68% to 92%, which means significant (61-80%) and very significant (81-100%). The highest is managing expectations when students appreciate their successful learning process. Conversely, the lowest is recognizing motivations when they feel enthusiastic about participating in the learning process. The most significant elements are managing expectations and committing to learning. On the other hand, the significant elements are articulating assumptions and recognizing motivations.

Figure 6

The percentage of Collaborative Engagement

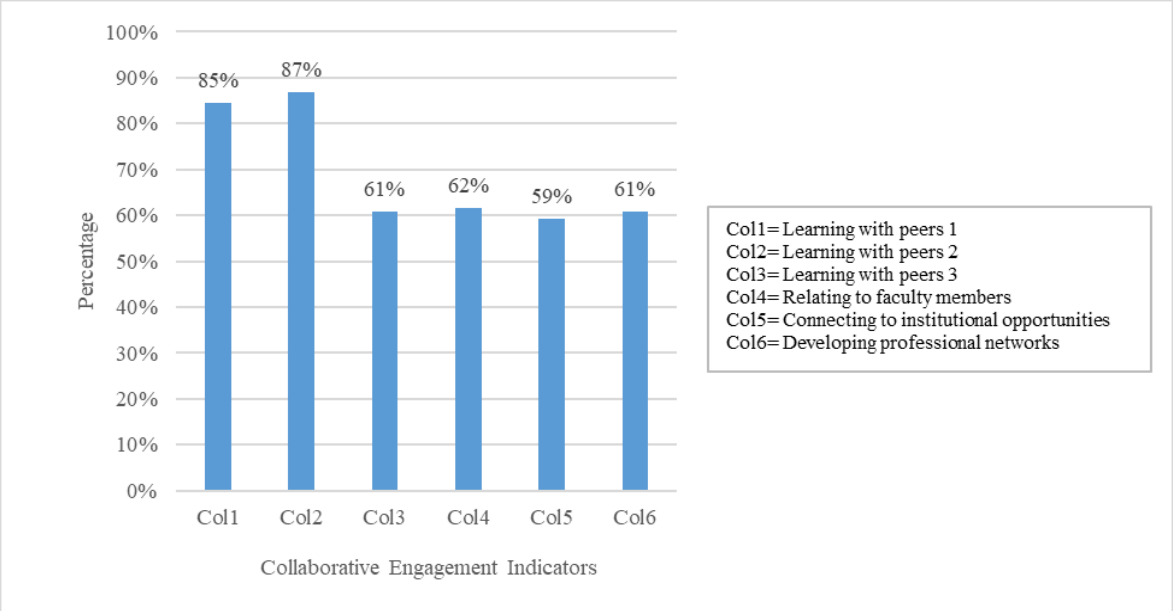
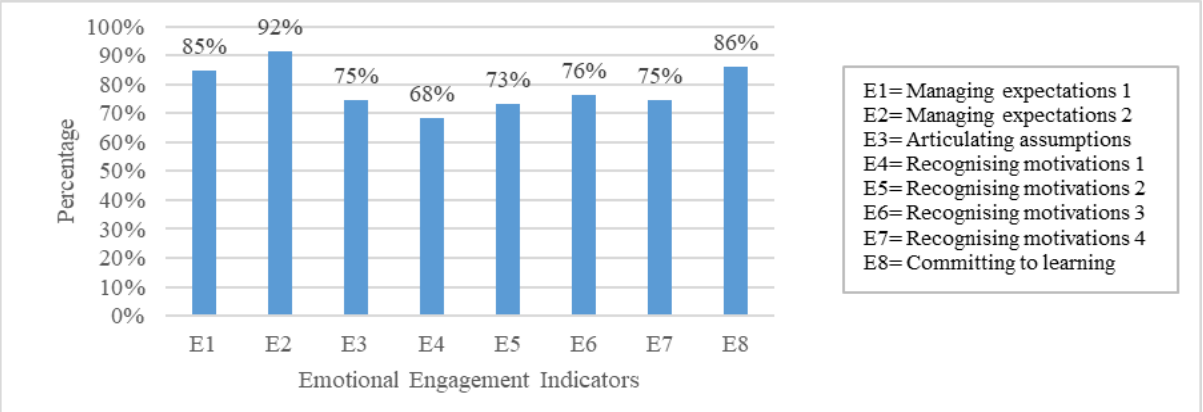


Figure 7

The percentage of Emotional Engagement



Explicitly, significant results are found in all engagement elements after the synchronous and asynchronous activities, as seen in Table 3, were compared. All engagement indicators in synchronous and asynchronous are between 64% and 75%, which is significant (61-80%). Figure 6 shows that 50% of students agree that behavioral engagement in synchronous activities is higher than

in asynchronous activities; while 50% of students agree that emotional engagement in synchronous activities is higher than in asynchronous activities. The other engagements are various and lower than 50%.

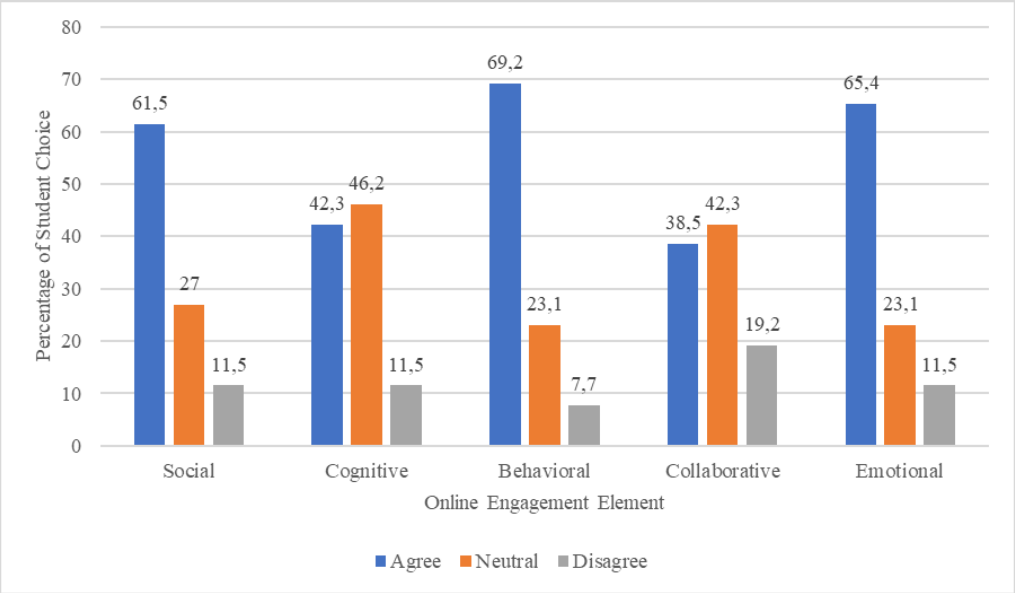
Table 3

The Comparison of Online Engagement Elements in Synchronous and Asynchronous Activities

Statement	Percentage
My social engagement in synchronous activities is higher than in asynchronous activities.	75
My cognitive engagement in synchronous activities is higher than in asynchronous activities.	72
My behavioral engagement in synchronous activities is higher than in asynchronous activities.	74
My collaborative engagement in synchronous activities is higher than in asynchronous activities.	64
My emotional engagement in synchronous activities is higher than in asynchronous activities.	74

Figure 8

Synchronous Engagement is Higher than Asynchronous Engagement



DISCUSSION

The study captured significant findings with different levels regarding student engagement in synchronous and asynchronous online learning. They cover five elements: social engagement, behavioral engagement, cognitive engagement, collaborative engagement, and emotional engagement. The following are the details.

Social Engagement

Social engagement was significantly found in synchronous and asynchronous activities, as seen in Figure 3. The most significant results are shown in three elements of social engagement: creating a sense of belonging, developing relationships with peers and lecturers, and establishing trust. These elements occurred in synchronous and asynchronous activities, particularly during group discussions with the same group members. In this case, students were significantly socially engaged when they worked in groups; communicated well with peers and lecturers via phone calls, email, WhatsApp, or other text message platforms; and had a good understanding. Student participation in group discussions widely accepts Krause's claim (2005, cited in Redmond et al., 2018) that students achieve learning outcomes equally. Indeed, social engagement is essential when working with peers for assessment and learning tasks (Sinha et al., 2015) to instill a sense of community (Perveen, 2016; Shea et al., 2012). To develop relationships with peers, the students promoted positive interdependence and group cohesion. In this study, social engagement happened through interaction and collaboration, which are significant factors in successful learning outcomes (Martinez-Caro, 2011), particularly in synchronous activities. More than half of students thought their social engagement in synchronous activities was higher than in asynchronous ones.

It is understandable that no significant challenges were found in student social engagement in the study since the asynchronous technologies support student interactions. In this case, lecturers shared audio lectures, handouts, articles, and PowerPoint presentations (Perveen, 2016) through LMS or WhatsApp group. Meanwhile, students recorded their group discussions and submitted them through GDrive.

Cognitive Engagement

The cognitive engagement was significantly found in synchronous and asynchronous activities, as seen in Figure 4, including thinking critically, activating metacognition, integrating ideas, justifying decisions, developing deep discipline understandings, and distributing expertise. Cognitive engagement was shown significantly in students' individual and group tasks, such as analysis tasks on classroom discourse and journal articles. The tasks were done asynchronously and discussed synchronously. Students participated actively during the discussion on the analysis task by volunteer or nomination in asynchronous meetings. Students shared their thoughts during QA and discussion in synchronous and asynchronous meetings to practice distributing expertise.

Students integrated ideas and justify information based on their readings and information from the lecturer, references, and peers during the analysis task in asynchronous activities. This interpretation is supported by earlier work (Perveen, 2016) on how asynchronous activities can scaffold students' previous knowledge with new concepts. This study shares previous views (Harris et al., 2009; Simonson et al., 2012) that learning activities and expectations require students to critically create, synthesize, explain, and apply the content or skills. This point is relevant to higher education, particularly for senior students in *Classroom Discourse Analysis* class, to comprehend complex ideas and to master difficult skills (Fredricks et al., 2004) since the analysis skill is required in the class.

Students activated their metacognition by responding to the lecturer's questions in synchronous and asynchronous meetings. From this perspective, students use metacognitive strategies to plan, monitor, and evaluate their cognition to accomplish tasks. However, they are the lowest among all elements of cognitive engagement. If this is the case, teachers play a pivotal role in facilitating, guiding, and motivating the learner, as depicted by some studies (Abou-Khalil et al., 2021; Anjarwati & Sa'adah, 2021; Bond & Bedenlier, 2019; Dwivedi et al., 2019; Hollister et al., 2022; Malkin et al., 2018; Xu et al., 2020), to be more engaged and autonomous in completing the assigned tasks.

In this study, obtaining data on how students develop deep discipline understandings through class observation, synchronously and asynchronously, is challenging. There were no explicit synchronous and asynchronous activities that developed students' understanding. However, based on the questionnaire, the students agreed that they attempted to reconcile what they learned with what they previously believed. This fact implies that additional data collection, such as interviews, should be conducted to get more comprehensive data. Synchronous and asynchronous activities promoting students' deep discipline understandings assist them in reflecting on their learning goals and outcomes through active participation in online learning environments. This finding aligns with Harris et al. (2009) and Simonson et al. (2012), who stated that online learning environments allow online students to become highly self-reflective.

Behavioral Engagement

Behavioral engagement was significant, as seen in Figure 5, including developing academic skills, identifying opportunities and challenges, developing multidisciplinary skills, developing agency, upholding online learning norms, and supporting and encouraging peers.

Synchronous and asynchronous activities signify the development of student's academic skills and how they read references, did assignments and tasks, and shared their thoughts in the discussion. Students were required to plan, manage, complete, and submit assignments on time in asynchronous activities to express their thoughts without judgment or interruptions, feel more flexible, and experience personalized learning opportunities (Lorenzo & Ittelson, 2005; Xie et al., 2018).

In identifying opportunities and challenges during synchronous activities, students found some opportunities when they responded to questions voluntarily and identifying challenges when doing assignments and tasks. For example, they can identify and cope with technical problems and challenges during the learning process, such as internet connection or other technical problems. The lecturer also facilitated students' opportunities and challenges in their analysis tasks to be more independent, self-regulated, self-paced, and student-centered learning through asynchronous activities, particularly individual tasks. This finding coincides with Perveen (2016).

Students also developed their agency through synchronous activities by establishing motivation, hope, self-efficacy, and a growth mindset. This agency development was shown by their participation in the whole session of Zoom meetings and individual assignments during asynchronous activities, such as analysis tasks and reading journal articles. Their active participation was significantly shown during the synchronous meetings. Inevitably, students learn something new by completing all tasks.

Moreover, students' behavioral engagement was prominently shown when they upheld online learning norms since the lecturer consistently reminded them university values and ethics, classroom codes, and conduct, such as camera use, tardiness, and asking permission. Therefore, the role of the teacher is crucial in facilitating, guiding, and motivating the learner. It is in line with Abou-Khalil et al. (2021), Anjarwati and Sa'adah (2021), Bond and Bedenlier (2019), Dwivedi et al. (2019),

Hollister et al. (2022), Malkin et al. (2018), and Xu et al. (2020). On the other hand, there is no data that students encouraged peers to reduce disruptive behaviors in synchronous and asynchronous activities, thus teacher's presence explicitly perpetuates the conducive learning in the classroom.

Another significant aspect of behavioral engagement is demonstrated when the students encouraged peers by following procedures during asynchronous learning. They suggested distributing the chapter to each group member during the reading task to write a report on the chapter based on the group transcript. The activity also showed that students encouraged peers to complete academic tasks. Students also encouraged peers to actively participate in learning by responding to their peers' opinions during discussions. Thus, students work with peers in a learning community to collaborate and support each other in pursuing academic, social, and emotional goals.

The absence of one indicator of behavioral engagement regarding the students who developed their multidisciplinary skills through extracurricular or non-academic activities within the educational institution may be due to the nature of online learning, particularly during the pandemic period. The Community Activities Restrictions Enforcement or CARE was implemented in Indonesia during the COVID-19 pandemic, including school and university activities.

Collaborative Engagement

The collaborative engagement among the students was significant with different levels (enough, significant, and very significant), as seen in Figure 6. It also includes learning with peers, communicating to faculty members, connecting to institutional opportunities, and developing professional networks.

As the most significant indicator of collaborative engagement revealed in this study, students learned with peers through study groups, group tasks, or assessments. Mainly, students collaborated with peers through forum discussion and share their reading or analysis results in synchronous and asynchronous ways. The findings indicate that interaction and collaboration are significant factors in successful learning outcomes (Martinez-Caro, 2011).

However, students perceived it was significant enough to connect to institutional opportunities by participating in a campus environment. Unfortunately, this finding could not be observable in synchronous and asynchronous activities due to the nature of online learning, particularly during the pandemic period. These results are like the student's behavioral engagement within the educational institution.

Emotional Engagement

A significant finding was also found in emotional engagement, as seen in Figure 7, including managing expectations, articulating assumptions, recognizing motivations, and committing to learning. The study exposes that the most significant results are found in managing expectations when the students appreciate the successful learning process and commit to learning. This fact is evident in their learning process or acquiring knowledge and skills through positive behavior, such as punctuality, being on camera, being actively involved in the QA and discussion (volunteer or nomination), and using time wisely to do the tasks. Their enthusiasm and interest encourage students to recognize their learning motivations and commitment. When the students feel engaged emotionally, they work harder during the learning process by completing all assignments. Senior students thoughtfully considered learning objectives because they critically synthesized their learning through asynchronous collaboration (Garrison & Kanuka, 2004; Osborne et al., 2018; Tathahira, 2020). This fact, thus, suggests that online instructors should determine how best to harness emotion for effective learning and teaching (Cleveland-Innes & Campbell, 2012).

CONCLUSION

This study investigated university student engagement in online learning. The significant finding indicates that university student engagement in online learning has various significance levels. Most students perceived behavioral and emotional engagement in synchronous activities as higher than in asynchronous activities. Some students (less than 50%) perceived social, cognitive, and collaborative engagement in synchronous activities as higher than in asynchronous activities. Thus, students feel more engaged in synchronous activities than the asynchronous ones because they can interact with the lecturer and their peers. Both synchronous and asynchronous learning revealed similar findings. This significant finding implies that synchronous and asynchronous learning play essential roles. Therefore, incorporating synchronous and synchronous activities in online learning provides provides more benefits than applying only one of them. This study is expected to contribute to the online learning interaction involving knowledge, students, and teacher. Online interactions create learning models, such as independent study, paced learning, and collaborative learning. In addition, online learning has various multimodality in communication, the community of inquiry, and structured learning resources. The pedagogical implication of the study covers the importance of well-designed courses to promote more engaging

learning interaction in synchronous and asynchronous online learning.

However, these findings have some limitations. The most significant is that this result cannot be generalized considering the limited number of respondents. To sum up, this study leaves a considerable challenge involving more respondents to gain more comprehensive data. Therefore, the problem deserves further investigation. In addition, the study only used the questionnaire to collect data. Interviewing participants will support classroom observation. Further study can identify student engagement from other perspectives, such as the teacher's perspective and the use of learning media. Investigation on other perspectives may contribute to more comprehensive findings.

ACKNOWLEDGEMENTS

The author acknowledges Prof. Dr. Didi Suherdi, M. Ed., for providing valuable or extensive comments on the manuscript.

REFERENCES

Abdous, M., & Yen, C. J. (2010). A predictive study of learner satisfaction and outcomes in face-to-face, satellite broadcast, and live video-streaming learning environments. *Internet and Higher Education, 13*(4), 248–257. https://doi.org/10.1016/j.iheduc.2010.04.005

Abou-Khalil, V., Helou, S., Khalifé, E., Chen, M. A., Majumdar, R., & Ogata, H. (2021). Emergency online learning in low-resource settings: Effective student engagement strategies. *Education Sciences*, *11*(1), 1–18. https://doi.org/10.3390/educsci11010024

Ahshan, R. (2021). A framework of implementing strategies for active student engagement in remote/online teaching and learning during the covid-19 pandemic. *Education Sciences*, *11*(9). https://doi.org/10.3390/educsci11090483

Al Mamun, M. A., & Lawrie, G. (2021). Factors affecting student behavioural engagement in an inquiry-based online learning environment. *Research Square*, 1–31. https://doi.org/10.21203/rs.3.rs-249144/v1

Anderson, T. (2009). The theory and practice of online learning: Towards a theory of online learning. *Electronic Journal of E-Learning*, *38*(4), 93–135.

Anjarwati, R., & Sa'adah, L. (2021). Student learning engagement in the online class. *EnJourMe (English Journal of Merdeka): Culture, Language, and Teaching of English*, *6*(2), 39–49. https://doi.org/10.26905/enjourme.v6i2.6128

Anugrah, F., Azzahra, S., & Suryaman, M. (2021). Students' perceptions regarding learning method: synchronous and asynchronous for online learning. *Journal of English Language and Education*, *6*(2), 2021. https://doi.org/10.31004/jele.v6i2.106

Barua, P. D., Zhou, X., Gururajan, R., & Chan, K. C. (2018). Determination of factors influencing student engagement using a learning management system in a tertiary setting. In R. Bilof (Ed.), *2018 IEEE/WIC/ACM International Conference on Web Intelligence (WI)* (pp. 604-609). IEEE. https://doi.org/10.1109/WI.2018.00-30

Bond, M., & Bedenlier, S. (2019). Facilitating student engagement through educational technology: Towards a conceptual framework. *Journal of Interactive Media in Education, 1*(11), 1–14. https://doi.org/10.5334/jime.528

Brown, A., Lawrence, J., Basson, M., & Redmond, P. (2022). A conceptual framework to enhance student online learning and engagement in higher education. *Higher Education Research and Development*, *41*(2), 284-299. https://doi.org/10.1080/07294360.2020.1860912

Cahyani, N. M. W. S., Suwastini, N. K. A., Dantes, G. R., Jayantini, I. G. A. S. R., & Susanthi, I. G. A. A. D. (2021). Blended online learning: Combining the strengths of synchronous and asynchronous online learning in EFL context. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *18*(2), 174-184. https://doi.org/10.23887/jptk-undiksha.v18i2.34659

Cheng, K. H., Liang, J. C., & Tsai, C. C. (2013). University students' online academic help seeking: The role of self-regulation and information commitments. *Internet and Higher Education*, *16*(1), 70–77. https://doi.org/10.1016/j.iheduc.2012.02.002

Cleveland-innes, M., & Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distributed Learning*, *13*(4), 269–292. https://doi.org/10.19173/irrodl.v13i4.1234

Creswell, J. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th ed.). Pearson Education, Inc.

Creswell, J. W. (2018). *Research design: Qualitative, quantitative and mixed methods approaches* (5th ed.). SAGE Publications Inc.

Dwivedi, A., Dwivedi, P., Bobek, S., & Sternad Zabukovšek, S. (2019). Factors affecting students' engagement with online content in blended learning. *Kybernetes*, *48*(7), 1500–1515. https://doi.org/10.1108/K-10-2018-0559

Fabriz, S., Mendzheritskaya, J., & Stehle, S. (2021). Impact of synchronous and asynchronous settings of online teaching and learning in higher education on students' learning

experience during covid-19. *Frontiers in Psychology*, *12*, 1-16. https://doi.org/10.3389/fpsyg.2021.733554

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of evidence. *Review of Educational Research*, *74*(1), 59–109. https://doi.org/10.3102/00346543074001059

Garbrick, A. H. (2018). *Factors influencing student engagement in an online asynchronous discussion forum measured by quantity, quality, survey, and social network analysis*. (Publication No. 10903658) [Doctoral dissertation, The Pennsylvania State University]. ProQuest Dissertations Publishing.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *Internet and Higher Education*, *7*(2), 95–105. https://doi.org/10.1016/j.iheduc.2004.02.001

Gilbert, B. (2015). *Online learning revealing the benefits and challenges*. [Master's thesis, St. John Fisher University]. https://fisherpub.sjf.edu/education_ETD_masters/303/

Greene, B. A. (2015). Measuring cognitive engagement with self-report scales: Reflections from over 20 years of research. *Educational Psychologist*, *50*(1), 14–30. https://doi.org/10.1080/00461520.2014.989230

Harris, J., Mishra, P., & Koehler, M. (2009). Teachers' technological pedagogical content knowledge and learning activity types: Curriculum-based technology integration refrained. *Journal of Research on Technology in Education*, *41*(4), 393–416. https://doi.org/10.1080/15391523.2009.10782536

Hollister, B., Nair, P., Hill-Lindsay, S., & Chukoskie, L. (2022). Engagement in online learning: Student attitudes and behavior during covid-19. *Frontiers in Education*, *7*. https://doi.org/10.3389/feduc.2022.851019

Hu, M., & Li, H. (2017). Student engagement in online learning: A review. In F. L. Wang, O. Au, K. K. Ng, J. Shang, & R. Kwan (Eds.), *2017 international symposium on educational technology* (pp. 39-43). https://doi.org/10.1109/ISET.2017.17

Jung, E., Kim, D., Yoon, M., Park, S., & Oakley, B. (2019). The influence of instructional design on learner control, sense of achievement, and perceived effectiveness in a supersize MOOC course. *Computers and Education*, *128*, 377–388. https://doi.org/10.1016/j.compedu.2018.10.001

Kew, S. N., & Tasir, Z. (2021). Analysing students' cognitive engagement in e-learning discussion forums through content analysis. *Knowledge Management and E-Learning*, *13*(1), 39–57. https://doi.org/10.34105/j.kmel.2021.13.003

Lin, X., & Gao, L. (2020). Students' sense of community and perspectives of taking synchronous and asynchronous online courses. *Asian Journal of Distance Education*, *15*(1), 169–179.

Lorenzo, G., & Ittelson, J. (2005). An Overview of E-Portfolios. *EDUCAUSE Learning Initiative*. https://library.educause.edu/resources/2005/1/an-overview-of-eportfolios

Malkin, A., Rehfeldt, R. A., & Shayter, A. M. (2018). An investigation of the efficacy of asynchronous discussion on students' performance in an online research method course. *Behavior Analysis in Practice*, *11*(3), 274–278. https://doi.org/10.1007/s40617-016-0157-5

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning Journal*, *22*(1), 205–222. https://doi.org/10.24059/olj.v22i1.1092

Martínez-Caro, E. (2011). Factors affecting effectiveness in e-learning: An analysis in production management courses. *Computer Applications in Engineering Education*, *19*(3), 572–581. https://doi.org/10.1002/cae.20337

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications, Inc

Noble, H., & Heale, R. (2019). Triangulation in research, with examples. *Evidence-Based Nursing*, *22*(3), 67–68. https://doi.org/10.1136/ebnurs-2019-103145

Ogbonna, C. G., Ibezim, N. E., & Obi, C. A. (2019). Synchronous versus asynchronous e-learning in teaching word processing: An experimental approach. *South African Journal of Education*, *39*(2), 1–15. https://doi.org/10.15700/saje.v39n2a1383

Omar, N. D., Hassan, H., & Atan, H. (2012). Student engagement in online learning: Learners attitude toward e-mentoring. *Procedia - Social and Behavioral Sciences*, *67*, 464–475. https://doi.org/10.1016/j.sbspro.2012.11.351

Osborne, D. M., Byrne, J. H., Massey, D. L., & Johnston, A. N. B. (2018). Use of online asynchronous discussion boards to engage students, enhance critical thinking, and foster staff-student/student-student collaboration: A mixed method study. *Nurse Education Today*, *70*, 40–46. https://doi.org/10.1016/j.nedt.2018.08.014

Perveen, A. (2016). Synchronous and asynchronous e-language learning: A case study of Virtual University of Pakistan. *Open Praxis*, *8*(1), 21–39.

Phelps, A., & Vlachopoulos, D. (2020). Successful transition to synchronous learning environments in distance education: A research on entry-level synchronous facilitator competencies. *Education and Information Technologies*, *25*(3), 1511–1527. https://doi.org/10.1007/s10639-019-09989-x

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, *2*(3), 923–945. https://doi.org/10.1007/s42438-020-00155-y

Redmond, P., Abawi, L. A., Brown, A., Henderson, R., & Heffernan, A. (2018). An online engagement framework for higher education. *Online Learning Journal*, *22*(1), 183–204. https://doi.org/10.24059/olj.v22i1.1175

Riduwan, A. (2019). *Belajar mudah penelitian untuk guru-karyawan dan peneliti pemula* [Easy learning of research for teachers, employees, and beginner researchers] (11th ed.). ALFABETA.

Sari, F. M. (2020). Exploring English learners' engagement and their roles in the online language course. *Journal of English Language Teaching and Linguistics*, *5*(3), 349. https://doi.org/10.21462/jeltl.v5i3.446

Shea, P., Uzuner, S., Bidjerano, T., Cohen, G., Wilde, J., & Jian, S. (2012). Learning presence: Additional research on a new conceptual element within the community of inquiry (CoI) framework. *The Internet and Higher Education*, *15*(2), 89–95. https://doi.org/10.1016/j.iheduc.2011.08.002

Simonson, M., Smaldino, S., & Zvacek, S. (2015). *Teaching and learning at a distance* (6th ed.). IAP–Information Age Publishing, Inc. All.

Sinatra, G. M., Heddy, B. C., & Lombardi, D. (2015). The challenges of defining and measuring student engagement in science. *Educational Psychologist*, *50*(1), 1–13. https://doi.org/10.1080/00461520.2014.1002924

Sinha, S., Rogat, T. K., Adams-Wiggins, K. R., & Hmelo-Silver, C. E. (2015). Collaborative group engagement in a computer-supported inquiry learning environment. *International Journal of Computer-Supported Collaborative Learning*, *10*(3), 273–307. https://doi.org/10.1007/s11412-015-9218-y

Tathahira, T. (2020). Promoting students' critical thinking through online learning in higher education: Challenges and strategies. *Englisia: Journal of Language, Education, and Humanities*, *8*(1), 79–92. https://doi.org/https://doi.org/10.22373/ej.v8i1.6636

Tusino, T., Sukarni, S., & Rokhayati, T. (2021). Hybrid Synchronous and asynchronous language learning in writing class: The learners' psychosocial perspectives in Indonesia. *New Educational Review*, *65*, 190–199. https://doi.org/10.15804/tner.2021.65.3.15

Vidhiasi, D. M., Hakim, M. A., Humardhiana, A., Ikawati, L., & Aisyiyah, M. N. (2021). Asynchronous learning: An answer in the era of pandemic. *Journal of English as A Foreign Language Teaching and Research*, *1*(2), 33–43. https://doi.org/10.31098/jefltr.v1i2.620

Vogt, K. L. (2016). *Measuring student engagement using learning management systems* (Publication No. 10140907) [Doctoral dissertation, The University of Toronto]. ProQuest Dissertations Publishing.

Xiao, J. (2017). Learner-content interaction in distance education: The weakest link in interaction research. *Distance Education, 38*(1), 123–135. https://doi.org/10.1080/01587919.2017.1298982

Xie, H., Liu, W., Bhairma, J., & Shim, E. (2018). Analysis of synchronous and asynchronous e-learning environments. In B. Xu (Ed.), *2018 3rd Joint International Information Technology, Mechanical and Electronic Engineering Conference (JIMEC 2018)* (pp. 270-274). Atlantis Press. https://doi.org/10.2991/jimec-18.2018.58

Xu, B., Chen, N. S., & Chen, G. (2020). Effects of teacher role on student engagement in WeChat-based online discussion learning. *Computers and Education*, *157*. https://doi.org/10.1016/j.compedu.2020.103956

APPENDICES

Appendix 1

The Observation Result of Social Engagement in Synchronous Meetings

Date	Group	Punctuality		The Use of Camera		Engagement	
		late	on time	on	off	Synchronous	Asynchronous
07-Sep-21	A	17 students were late	There were 11/28 students being on time.	At the beginning, Lecturer did a greeting and asked students to be on cam. Students did not open the cam directly, so the lecturer reminded all students to be on cam. When the lecturer showed presentation, all students were on cam.	There were 3 students on and off cam. There were 2 students off came without any permission. Lecturer always reminded students to be on cam in the whole session. Some students asked for lecturer's permission to be off cam via chat box due to technical problems. During the reading session, 2-4 students were off cam.	As an ice breaking, the lecturer sang some songs and asked students to continue, 1 student responded spontaneously and 2 students were nominated. When introducing PLOs, the lecturer nominated 5 students,10 students voluenteerily responded, 2 students raised their hands. To check students' understanding, the lecturer nominated 2 students. At the end of class, 4 students volunteerily did self assessment.	

Appendix 2

The Observation Result of Cognitive Engagement in Synchronous Meetings

Date	Group	Punctuality		The Use of Camera		Engagement	
		late	on time	on	off	Synchronous	Asynchronous
12-Oct-21	A	07.10: 1 student was late.	07.10: 15 student were on time	At the beginning, Lecturer did a greeting and asked students to be on cam. 24 students were on cam	1 student asked permission to be off cam	Lecturer was nominating some students. Lecturer was playing his audio record regarding the topic. Lecturer showed PPT "Identifying Synoptic Moves" and explained the material. Nominating students was done to check their understanding. When L asked students to make examples (K-2 Initted Exchanges), 3 students volunteerily shared some examples. Also, L asked students to make some examples regarding Initiated Exchanges, four students were nominated. Then L asked students to check the provided transcript for 15 minutes to find some excanges. In this moment, two students were nominated. Lecturer gave practice with critical thinking and invited a voluenteer, 1 student responded.	

Appendix 3
Items and Indicators of Social Engagement

Building community	I work with peers for assessment and/or learning tasks.	S1
	I use social forums such as forum discussions in SPOT UPI and social media platforms.	S2
Creating a sense of belonging	I create a sense of belonging when I use SPOT UPI, WhatsApp group, or other platforms to communicate with lecturers and peers.	S3
	I create a sense of belonging when working in a group.	S4
Developing relationships	I develop relationships with peers and lecturers by working and studying with them.	S5
	I communicate with peers and lecturers via phone, email, WhatsApp, or other text message platforms.	S6
	I promote positive interdependence and the success of the group's members (group cohesion).	S7
Establishing trust	I trust my peers when working in group work.	S8
	I have a good understanding and can communicate well with my peers.	S9

Appendix 4
Items and Indicators of Cognitive Engagement

Thinking critically	I think critically about what I have read, learned, searched, and discussed with my peers and lecturer.	C1
Activating metacognition	I use metacognitive strategies to plan, monitor, and evaluate my cognition when accomplishing tasks.	C2
	I memorize facts, ideas, or methods from the subject and readings.	C3
	I analyze the essential elements of an idea, experience, or theory, such as examining a particular case or situation in-depth and considering its components when I read references and accomplish tasks.	C4
Integrating ideas	I synthesize and organize ideas, information or experiences into new, more complex interpretations and relationships.	C5
Justifying decisions	I judge the value of information, arguments, or methods by examining how others gather and interpret data and assessing the soundness of their conclusions when I read references and accomplish tasks.	C6
Developing deep discipline understanding	I attempt to reconcile what I learned with what I previously believed.	C7
Distributing expertise	I apply theories or concepts to practical problems or in new situations (when I learn new subjects).	C8

Appendix 5
Items and Indicators of Behavioral Engagement

Developing academic skills	I develop academic skills such as reading, writing, and listening through synchronous and asynchronous activities.	B1
	I develop my academic skills such as planning, time management, and goal setting from both synchronous and asynchronous activities.	B2
Identifying opportunities and challenges	I am more independent during online learning.	B3
	I am more self-regulated in learning.	B4
	I can identify and cope with technical problems and challenges during the learning process.	B5
	I can identify and cope with personal problems and challenges during the learning process.	B6
Developing agency	I am motivated to participate, contribute to discussions, and learn synchronous and asynchronous learning tasks.	B7

	I hope to learn something new from both synchronous and asynchronous learning.	B8
	I have self-efficacy (the ability to achieve something) by joining both synchronous and asynchronous learning.	B9
	I have a growth mindset joining both synchronous and asynchronous learning.	B10
Upholding online learning norms	I will come on time to the synchronous meeting.	B11
	I open the video camera during the synchronous meeting.	B12
Supporting and encouraging peers	I support and encourage peers to follow procedures during synchronous and asynchronous learning.	B13
	I encourage peers to participate in the learning process actively.	B14
	I encourage peers to reduce disruptive behaviors.	B15
	I encourage peers to complete academic tasks.	B16

Appendix 6
Items and Indicators of Collaborative Engagement

Learning with peers	I learn with peers through online discussions.	Col1
	I learn with peers through study groups and group tasks or assessments.	Col2
	I learn with peers through tutoring.	Col3
Relating to faculty members	I have experience with faculty members (lecturers).	Col4
Connecting to institutional opportunities	I connect to institutional opportunities by being involved in a campus environment.	Col5
Developing professional networks	I develop professional networks to enrich the educational experience.	Col6

Appendix 7
Items and Indicators of Emotional Engagement

Managing expectations	I value the learning process or the acquisition of knowledge and skills.	E1
	I appreciate the success of the learning process.	E2
Articulating assumptions	I worked harder than I thought I could during the learning process.	E3
Recognizing motivations	I feel enthusiastic about participating in the learning process.	E4
	I enjoy the learning process.	E5
	I am interested in following the learning process.	E6
	I feel worried during the learning process.	E7
Committing to learning	I am committed to the learning process.	E8

Appendix 8
Online Engagement Framework for Higher Education (Redmond et al., 2018)

Online Engagement Element	**Indicators**	**Observation Results**	
		Synchronous	**Asynchronous**
Social engagement	Building community		
	Creating a sense of belonging		
	Developing relationships		
	Establishing trust		
Cognitive engagement	Thinking critically		
	Activating metacognition		
	Integrating ideas		
	Justifying decisions		
	Developing deep discipline understanding		
	Distributing expertise		

Behavioral engagement	Developing academic skills
	Identifying opportunities and challenges
	Developing multidisciplinary skills
	Developing agency
	Upholding online learning norms
	Supporting and encouraging peers
Collaborative engagement	Learning with peers
	Relating to faculty members
	Connecting to institutional opportunities
	Developing professional networks
Emotional engagement	Managing expectations
	Articulating assumptions
	Recognizing motivations
	Committing to learning

Appendix 9

Steps for analyzing students' engagement in classroom activities with students' points of view.

1. Collecting all questionnaires
2. Recapitulating all the questionnaire items into excel
3. Counting the percentage of the data with the formula presented by Riduwan (2019)

$$DP = \frac{n}{N} x100\%$$

Explanations:
DP = Descriptive Percentage (%)
n = Empiric Score (Score from the data)
N = Maximum Score

Respondents	10	10	10	10	10	Mean
The highest scale	5	5	5	5	5	
The lowest scale	1	1	1	1	1	
The highest score	50	50	50	50	50	
The lowest score	10	10	10	10	10	
Percentage of each item	72%	58%	76%	56%	40%	60%

4. Determining the mean of all the items
5. Comparing the mean to the analysis criteria to determine the engagement level in online classrooms.

Very insignificant	0-20%
Insignificant	21%-40%
Enough	41%-60%
Significant	61%-80%
Very significant	81%-100%

Criteria for Descriptive Analysis of the Percentages

6. Comparing the mean to the analysis criteria to determine the level of engagement in online classrooms.