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Synchronous Zoom Web Conference System: An Exploratory Study on Students' E-Learning Experience

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Synchronous e-learning is a distance learning through a real-time live web-conference platform. In this learning, students' reflection on their experience in using the system is beneficial to the overall success. This study explores students' experience and what they perceive from the implementation of synchronous e-learning through zoom conference system. Using exploratory sequential design, the data were collected from 62 students taking an English subject in a university in Indonesia. Classroom observations and a set of a questionnaire by a five-point Likert scale were used to collect the data. Findings from observations show that there are three factors of activities: communication, lesson material and study process. Findings from the questionnaire indicate positive answers from all three factors. The students agreed that they could communicate at ease before the lesson starts, question and answer during the study process, and work collaboratively through the breakout rooms. Through the whiteboard/shared screen feature in zoom conference, students described that they were able to give feedback to each other. Moreover, they mostly agreed that materials to the lesson could be accessed and understood in e-learning. However, with all the positive feedback on the three factors, they agreed that the traditional face-to-face mode still gives easier and better access from the factors of communication and materials compared to the e-learning.

***Key words**:* e-learning, synchronous, web-conferencing systems, experience, perception

Synchronous e-learning adalah pembelajaran jarak jauh melalui platform konferensi web langsung real-time. Dalam pembelajaran ini, refleksi siswa tentang pengalaman mereka dalam menggunakan sistem ini bermanfaat bagi keberhasilan secara keseluruhan. Studi ini mengeksplorasi pengalaman siswa dan apa yang mereka rasakan dari penerapan e-learning yang sinkron melalui sistem zoom conference. Menggunakan metode desain sekuensial eksploratori, data dikumpulkan dari 62 siswa yang mengambil mata kuliah Bahasa Inggris di sebuah universitas di Indonesia. Pengamatan kelas dan seperangkat kuesioner dengan skala Likert lima poin digunakan untuk mengumpulkan data. Temuan dari pengamatan menunjukkan ada tiga faktor kegiatan: komunikasi, bahan pelajaran dan proses belajar. Temuan dari kuesioner menunjukkan jawaban positif dari ketiga faktor. Para siswa sepakat bahwa mereka dapat berkomunikasi dengan nyaman sebelum pelajaran dimulai, tanya

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jawab selama proses belajar, dan dapat bekerja secara kolaboratif melalui ruang kelompok. Melalui fitur papan tulis / layar bersama dalam konferensi zoom, siswa menjelaskan bahwa mereka dapat saling memberikan umpan balik. Selain itu, mereka sebagian besar sepakat bahwa materi pelajaran dapat diakses dan dipahami dalam e-learning. Namun, dengan semua umpan balik positif pada tiga faktor, mereka sepakat bahwa tatap muka tradisional masih memberikan akses yang lebih mudah dan lebih baik dari faktor komunikasi dan bahan dibandingkan dengan e-learning.

INTRODUCTION

The implementation of e-learning as an integral part of the whole learning process and methods in higher education specifically in Indonesia has been increasing rapidly in the last decade. This is supported by the development of technology and the skills of the people to use the technology. Indonesia was ranked 39 out of 139 countries on the component of digital skill among population by The World Economic Forum Global Competitiveness Index in 2018. The general population in Indonesia includes the education practitioners; students and teachers who are now more ready to use technology in education processes. A study on the comparison of students' readiness in implementing e-learning, The & Usagawa (2018) found that the students of UNSRAT University in Indonesia were ready and welcome to adopt e-learning education in their university. In the world the new wave of e-learning has been accommodated and applied progressively in the last decade. E-learning has become the conventional method of learning process in universities opposing the traditional methods (Alabbasi, D., & Ed, D., 2018). Progressing towards the same direction in the present time, high numbers of universities in Indonesia have been implementing e-learning and blended learning to complement the classroom based classes (Kusumo et all, 2018).

The types of e-learning that become more popular in Indonesian universities is asynchronous learning such as blended-learning as an integral part of classroom-based courses. Blended learning is hybrid. The use of technology is at the average of 30 % of the overall period of study. The other 70% is done through the face-to-face classroom based meetings or other methods of learning. These different settings of a learning comprises one learning objective of a course and are connected one to the others. In other words, the lesson given in e-learning is conjugated to the other settings in the course. Another example of blended learning is the use of LMS (learning management systems) that enable lecturers to give online assignments and chat in discussion forum, although the implementation of LMS still focuses on the assignments rather than on the utilization of the interaction feature between teacher and learners. The second type that is termed as flipped classroom has also been used in Indonesia. Flipped classroom is when the students study the lesson material independently usually through teacher's online presentation or clips, and they will have the assessment offline through traditional face-to-face meeting in a classroom.

However, this research focuses on another type of online education known as synchronous learning. This learning uses 100 % of learning process online. This type of e-learning is not as common in application as blended learning at the present time but it has started growing in Indonesian higher education. This fully e-learning is distance learning that enable students and teacher to be online at a realtime. Synchronous learning is face-to-face online using web-cam classroom chat and board for lesson discussion in the study process. In this type of e-learning, students and teacher could have person to person interaction similar

with the traditional face to face classroom. Assignments are also conduted online.

The gap that is found between the various types of e-learning applied in Indonesia with the traditional face-to-face meeting is that the e-learning does not accomodate peer interaction and tutor interaction. The key aspects of peer interactions are knowledge communication and relation communication (Jucks, Paechter, & Tatar, 2003). Knowledge communication and relation communication are those of students' interaction or to work collaboratively in studying. Students interaction could foster connection between learners. Another type of interaction that is important to the application of e-learning is tutor interaction that consists of tutor's expertise and tutor's support (Johnson, Hornik, & Salas, 2008). Many university students focus on obtaining learning materials but not on communication and interactions (Njenga & Fourie, 2010). The synchronous learning has given an opportunity for richer interactions between teacher and students and it could be used in Indonesia to extend the use of techology more to the features of interaction between teacher and students instead of only on the complementary of the classroom based courses.

The shift from asynchronous learning to synchronous learning needs to be enhanced in order to get more benefit of technology (Santoso, 2018). In synchronous learning human interaction is accomodated thoroughly through the webcam. Therefore, synchronous learning is also known as online face-to-face method that enable human interaction in a realtime classroom setting. Through synchronus learning students are not only able to communicate orally to teacher but also to their classmates. However, the implementation of e-learning in forms of blended learning and LMS are still the most common application in Indonesia. The existence of synchronous learning has given another way of enhancing the factor of human interaction of e-learning implementation.

Students as the main factors in e-learning are hoped to get the benefits from the application of e-learning. They play a significant role on the process and the success of it as well as the continuity and existence of e-learning in Indonesia. After more than a decade of the growing implementation of e-learning in Indonesia, many successes have been found. Aside from the successes yet research has found that the users of technology in education in Indonesia still face some obstacles. Some major problems are about the students independency, connection problem, and lack of familiarity with the online materials (Kusumo et all, 2018). On the other hand, these students who generally are the millenials have been living with tremendeous numbers of technology advancement in their social lives. Therefore, students in other parts of the world could accept and support the idea of e-learning in their education (Al-Adwan, Al-Adwan, & Smedley,2013; Greenhow, Walker, & Seongdok, 2009); similarly, they are also hoped to have similar acceptance toward e-learning. In order to find out the students' acceptance toward e-learning perception, satisfaction, and opinion about their own experience, it is needed to investigate the implementation of another type of e-learning such as scynchronous learning. This research attemps to find out students perception of their e-learning experience through a synchronous e-learning by using zoom conference system. The questions asked in this research are:

1. What activities do the participants have in the synchronous e-learning learning through zoom conference system?
2. What do students perceive the implementation of synchronous e-learning learning through zoom conference system that they had experienced? And what do they perceive e-learning

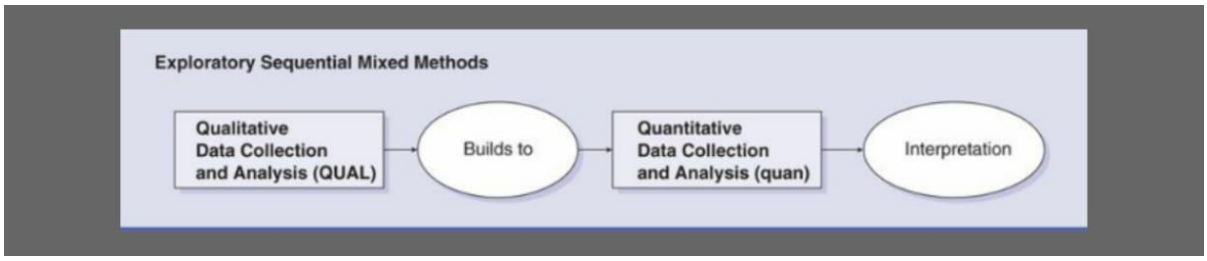
compared to traditional face-to-face learning?

METHOD

Research Design

This research adopted exploratory sequential design that aimed to explore students' experience and perception on their synchronous e-learning class. Exploratory sequential design is one of Cresswell's (2014) mixed research designs. Exploratory sequential design starts with a qualitative exploratory data. After that, data from the qualitative phase is used to develop a quantitative instruments and distributed to the participants (Cresswell, 2014; Creswell & Plano, 2010). The final data analysis is interpreted from the findings from the quantitative phase.

Figure 1: Exploratory Sequential Mixed Method (Cresswell 2014)



The intention of the strategy is to develop a quantitative instrument to measure data from a larger population generalized from a smaller population of the same setting. The first phase is to gather data to be analyzed and later be used to develop a quantitative data instrument in the second phase.

The purpose of exploratory sequential research design in this study was to explore students' experience and what they perceived from the implementation of synchronous e-learning through zoom conference system. In the first qualitative phase of the study the research questions focused on observing the e-learning to investigate the types of activities applied. In the second quantitative phase, a questionnaire about what students perceived from the activities in the e-learning and what they perceived from e-learning compared to traditional face-to-face.

Setting and Participants

The participants of this research were 62 students from two classes studying at the same university in Indonesia and were taking the same English subject which focused on grammar and reading for Test of English for International Communication (TOEIC) with the same lecturer. This subject was a compulsory subject that students should take during their undergraduate study period. The final exam of this subject was the TOEIC test. The participants were in their first semester at the university and their ages range from seventeen to twenty years old. All of them were from Indonesia.

The period of the study was one semester which consisted of 14 meetings. During the course period the students got two kinds of exams: mid semester and final semester test. The questionnaire was distributed to the students at the end of the course during final exam. The video recordings however were taken from four sessions held with the students. The duration of the meetings was 100 minutes for each session.

Data Collection Method and Analysis

Firstly, the researcher of this study observed the e-learning to investigate the types of activities the students had. The observations were conducted two times in each class. Therefore, the overall observations were four times. Each recording was a full recording of a session that had 100 minutes in duration. Secondly, the video recordings were analyzed qualitatively to investigate the types of activities, and then the activities were categorized. The categorizations then were used to develop the questions in the questionnaire. These categorizations is to answer the first research question. Thirdly, the questionnaire was distributed to the participants. The results of the questionnaire were measured quantitatively for the frequency to find the answers of the second research question.

The instruments used to gather the data were classroom observation recordings and questionnaire. Classroom activities were recorded and then the questionnaire was distributed to the participants. Questionnaire is a survey instruments for the purposes of investigating data on attitudes opinions or beliefs and motivations in learning language (Dörnyei, 2003). A set of closed-item questionnaire using the 5 options Likert Scale answers was used to gather the data.

FINDINGS AND DISCUSSION

The data collections showed interesting findings in relation to the research questions. The findings are presented based on each research question.

Reseach question 1: What activities do the participants have in the synchronous e-learning through zoom conference system?

The video recordings from the observations showed the activities students had during the lessons, and they were categorized into these three aspects:

Table 1. *Activities during e-learning*

Activities	Category
Greet each other	Communication
Small talks before the lesson	
Private conversation with lecturer	
Classroom lecture to all students	
Question and answer between students and lecturer	
Question and answer between students	
Group discussion in breakout rooms	
Slides share/shared screen materials	Materials
Download questions for exercise	
Upload the answers of exercise	
Answer polling questions	Study Process
Presentation of the lesson through slides share and whiteboard share by the lecturer	
Question and answer about the lesson	
Classroom practice through whiteboard share	
Group work in breakout rooms	

The activities then were categorized, and the categorizations were used as the factors in generating questions for the questionnaire.

Figure 1. Spoken interaction in the synchronous e-learning

Figure 1 is a capture of classroom activity when students were on the web-cam. This activity was done when students greeted each other and had a small talk before the lesson start. This was also done after the students submitted their tasks by uploading the answer to the chat feature (see the right side), they could greet each other once again for the leave-taking as the sign that the class finished.

Figure 2. Written communication in the synchronous e-learning

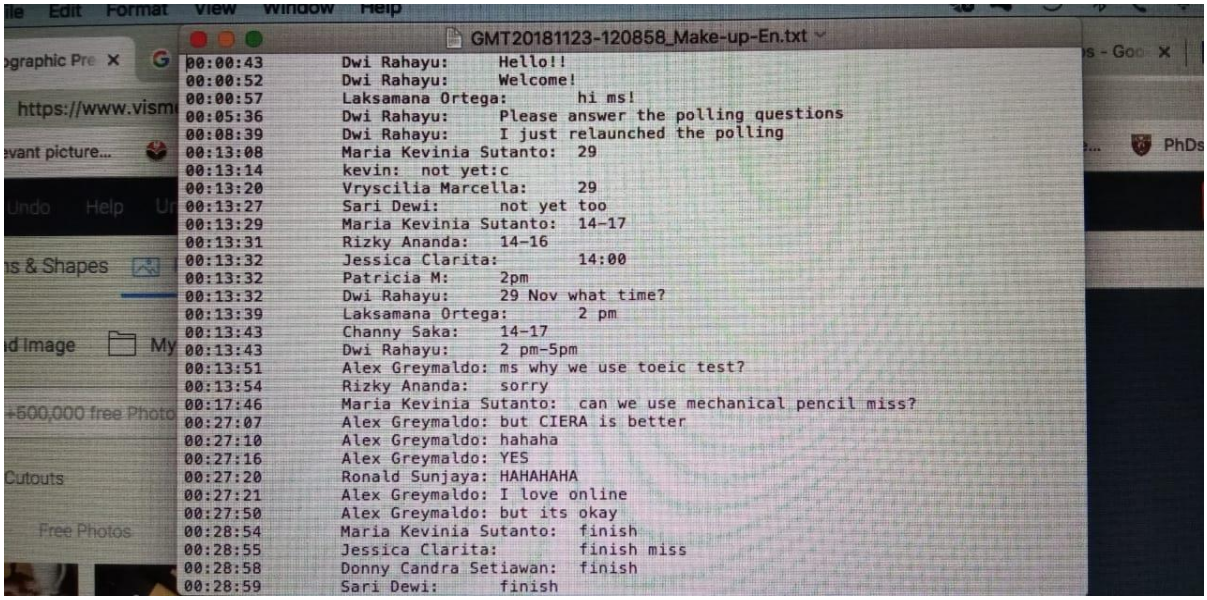


Figure 2 is a capture of written communication in the e-learning. There were two chat features in the e-learning: private chat and classroom chat. In the classroom chat, lecturers had conversation with all students about the tasks progress or checking students' participation to the lesson. The private chat, on the other hand, was for students to communicate with the

lecturer for individual matter such as technical problem the student has. Private chat was also used by the lecturer to monitor individual participation.

Figure 3. Shared Screen in the synchronous learning

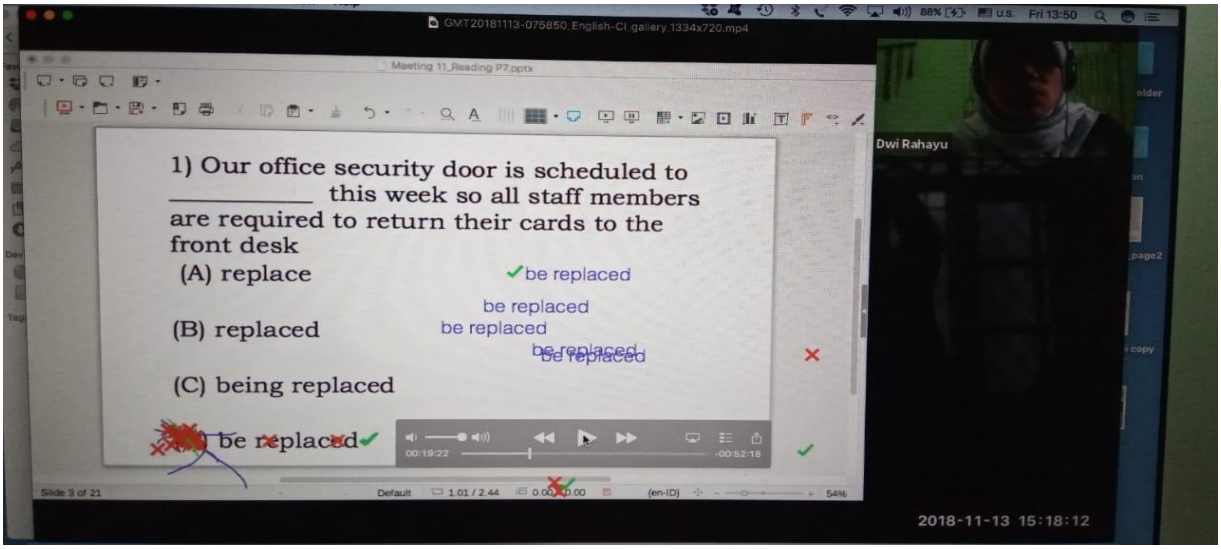


Figure 3 is a capture of a screen that the lecturer shared to all students during the study process. This screen functioned as a whiteboard for lecturer to show the material and for students to answers in written responses. Students and lecturer used different font colors to differentiate each other. During this activity lecturer could communicate orally with the students while explaining the materials to the students.

Categorizations of the Activities

The activities in communication category were the spoken and written interaction during the lesson whose functions were to get information to share information or to discuss the lesson (see table 1). Spoken interactions were done in 'greet each other' 'small talk before the lesson' (see Figure 1) and 'classroom lecture to all students' activities. Other activities such as 'private conversation with lecturer' 'question and answer between students and lecturer' 'question and answer between students and group discussion in the breakout rooms' could be done in both spoken and written manners. Secondly, activities in materials category were the activities of accessing learning materials from slides share/shared screen and downloaded or uploaded exercise questions in the chat feature (see the right side of Figure 1). Lastly, the activities that were categorized as study process included the activities of discussing the core lessons of the sessions and having the tasks for the students. In these activities, lecturer shared slides containing the core lessons, discussed them with the students, and distributed task questions for students' practices. In addition, before discussing about the lessons, students were asked questions about the information of exams, task progress, or other information related to study process.

Research question 2: What do students think about the implementation of synchronous e-learning from the factors of communication material and study process through zoom conference system that they had experienced?

The result of the questionnaire is shown in Table 1. The questions were about three different factors of e-learning: communication material and study process. These findings will be discussed consecutively:

Table 2. *Measures of frequency from the questionnaire (percentage)*

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I get announcement or reminder communicated in e-learning		1.6%	16.1%	33.9%	48.4%
I can communicate easily in spoken communication with my lecturer in online class	1.6%	4.8%	29%	43.5%	21%
I can communicate easily in written communication with my lecturer in online class	0%	4.8%	27.4%	41.9%	25.8%
I get the feedback on my learning progress from my lecturer in e-learning	1.6%	6.5%	24.2%	50%	17.7%
I can ask and answer questions with my lecturer in e-learning	0%	4.8%	22.6%	38.7%	33.9%
I can communicate and discuss the lessons easier and better with my classmates in face-to-face meeting compared to online meeting	0%	4.8%	19.4%	32.3%	43.5%
I can communicate and discuss the lessons easier and better with my lecturer in face-to-face meeting compared to online meeting	0%	4.8%	14.5%	43.5%	37.1%
Communication with my classmates in online meeting is the same as communication in face-to-face meeting	16.5%	14.5%	32.3%	35.5%	11.3%
Communication with my lecturer in online meeting is the same as communication in face-to-face meeting	6.5%	11.3%	29%	37.1%	16.1%
I can participate in answering questions through the whiteboard/shared screen in the e-learning	1.6%	1.6%	17.7%	35.5%	43.5%

I can get the lesson materials easily in e-learning	1.6%	4.8%	22.6%	45.2%	25.8%
I can get grammar practices in e-learning	1.6%	3.2%	25.8%	45.27%	24.2%
Access to lessons and materials is easier and better in face-to-face learning compared to the e-learning	0%	3.2%	32.3%	33.9%	30.6%
I can understand the lessons given in e-learning	0%	6.5%	29%	43.5%	21%
I can communicate easily with other students in e-learning	4.8%	3.2%	27.4%	37.1%	27.4%
Group work in breakout rooms enable me to collaborate with my classmates	3.2%	4.8%	24.2%	32.3%	35.5%
I can have an ice breaker and have a simple chat with my classmates before the lesson starts	32.3%	3.2%	24.2%	43.5%	25.8%
During discussion my classmates can correct my answers and I can correct their answers so we can learn from each other	0%	4.8%	22.6%	43.5%	29%

Communication

From the factor of communication, the participants mostly responded with satisfaction when asked about the communication with both lecturer and classmates in e-learning. More than 60% of participants agreed that they could communicate at ease in e-learning. Communication in the synchronous e-learning could happen in spoken and written modes. In Zoom conference platform, students were able to communicate easily through the chat feature to the whole class in the class chat room (41.9% agree and 25.8% strongly agree) to communicate privately with the lecturer and the classmates through a direct message. In addition, the spoken communication between lecturer to the students and between students to their classmates is accommodated through the conference room (see figure 2). The communication in this platform happened before and during a lesson. 43.5% students agreed and 25.8% strongly agreed that they could have an ice-breaker and had a simple chat with their classmates before the lesson started. Similar with communication in traditional face-to-face, students were able to have informal chit-chat before the lesson starts such as to greet each other. Students are able to enter the conference room before the lecturer logged-in. This was the time when students could have a chit-chat. Once the lecturer joined the conference room, the spoken communication was controlled by the lecturer such as to decide when to activate the speaker or to mute the students so that they could focus on the lecturer alone. These features significantly helped the lecturer to organize and control the communication process during the lesson.

Lesson Materials

The second factor that was asked to the participants was about the learning materials they used on the e-learning. The questions were about the access to the learning materials and type of learning materials they got. 45.2% participants agreed and 25.8% strongly agreed that they got the lesson materials easily in e-learning. 45.27% agreed and 24.2% strongly agreed that they could get grammar practices that they needed as the goal of the subject they were taking. The materials were in the forms of comprehension questions mostly about TOEIC reading and structure parts in MsWord format. During a group assignment, this type of material could be uploaded by the lecturer through the chat room and students could download the file. They could simply answer the questions by typing or marking the correct answers, and then after they finished the assignment they submitted the file by uploading to a direct chat to the lecturer.

Study Process

Study process was the last factor asked to the participants. They agreed (38.7%) and strongly agreed (33.9%) that they could ask and answer questions with the lecturer during the study process. During a discussion about grammar concepts and practice questions the lecturer used the whiteboard feature to display a question to be discussed and to give a question to the students. This process of study was a default activity conducted in a traditional face-to-face classroom, and it was brought to the online classroom through synchronous learning. In this process, the participants agreed (35.5%) and strongly agreed (43.5%) that they could participate in answering questions through the whiteboard/shared screen. Lastly, they agreed (32.3%) and strongly agreed (35.5%) that they could collaborate with their classmates in the breakroom where they were separated into groups and were given a group task by the lecturer.

The high percentage of these questions about study process has given a positive answer to the factor of study process because it is an important aspect of e-learning. In the study of Chow and Shi (2014), from the four factors of satisfactions (peer communication, tutor communication, materials and study process), the learning process give the most significant impact to the satisfaction and continuity of the e-learning program. Therefore, the positive feedback on this factor can be assumed as students' satisfaction on the e-learning they experience.

2. What do they think about the e-learning compared with the traditional face-to-face learning?

The final question asked what students thought about the e-learning they experienced compared to the traditional face-to-face learning. Most participants agreed (43.5%) and strongly agreed (37.1%) that they could communicate and discuss the lessons with their lecturer as well as communication with their classmates. 32.3% agreed and 43.5% strongly agreed that traditional meeting was easier and better than e-learning. From the communication factor, more than 60% participants were satisfied with the communication in e-learning; however, when it was compared to the traditional learning, they thought that face-to-face learning was easier and better in terms of communication. It can be assumed that students may need more time to be more familiar with the new learning experience (e g synchronous e-learning).

Secondly, the students also agreed (33.9%) and strongly agreed (30.6%) that accessing the materials was easier in face-to-face than e-learning. The reason for this is probably because

they should upload and download files when they need to access materials in e-learning while in face-to-face meeting they could directly get the printed books or modules.

CONCLUSIONS

The findings of this study indicate that there are three aspects of activities found: communication, materials and study process. From the factor of communication, more than 60% of participants admitted that synchronous e-learning accommodates good access of communication between students-teacher and student-student. Furthermore, more than 60% participants also agree that they could learn and understand the lesson given in the synchronous learning. These findings positively support the continuity of synchronous learning because communication is a significant aspect in learning. Secondly, more than 60% of the participants agree that the material and the access to the lessons and materials are easier in traditional face-to-face compared to synchronous learning. However, details and description of lessons and materials meant by the participants need to be further investigated. This could mean that lessons and materials need to be improved in synchronous learning and to be confirmed with the outcome of the study. However, this could also mean that the participants need more time to adjust with the new learning method.

Another point is that although from the communication factor the participants were satisfied with the synchronous learning, still they preferred traditional face-to-face as the easier and better way in accessing materials. It can assumed that students found it more complicated to download and upload files to the online platform compared to opening hardcopy books when they are in a traditional face-to-face classroom. It might also be assumed that because some of the participants chose to use their mobile phones or tablets instead of computers to join the online class they could not have the access to the uploaded material files and could not submit their work through the chat features. These findings could be used as an input for the provider of synchronous learning to enhance the features, so that they could be accessed and operated by using broader types of gadgets.

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