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Exploring Students' Competences in Building Effective Online Learning during COVID-19 Pandemic

Rizki Farani[1]*

[1]English Language Education Program, Universitas Islam Indonesia, Indonesia

*Corresponding author: rizki.farani@uii.ac.id

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Abstract

COVID-19 outbreak has caused some significant learning issues for students, such as internet connections, digital competence, heavy workloads, distraction, and difficult time management. However, there is still limited exploration on how students survived in online learning. To fill the void, this study aims to explore specifically how students completed their assignments in pandemic. The method focused on discourse content analysis to investigate students' personal reflection. There were 22 undergraduate students who shared their reflective notes as main data. Supporting data were obtained from observation in Zoom meeting, WhatsApp group and Google Classroom. All data were analyzed by using COVID-19 Online Learning (CoOL) conceptual framework which includes three inputs: 1) students' interaction, 2) instructors' course design and 3) institutions' facilities. Based on the results, interaction and course design play a significant role in achieving learning goals. They created a careful plan, studied independently, collaborated with peers, and consulted their work to the teachers. At the end of the semester, they gained new insight about knowledge and teamwork skills. In conclusion, students were able to survive online learning during the pandemic. Furthermore, teachers' role is to enhance their effort by providing guidelines and feedback.

Keywords: *COVID-19 pandemic, effective online learning, students' competences, undergraduate students*

INTRODUCTION

Online learning has become a crucial learning strategy during COVID-19 pandemic. Most learning activities are delivered through synchronous and asynchronous modality. Teachers use synchronous video conferencing to maintain direct interaction with students and provide asynchronous recorded materials through digital platforms such as LMS (Learning Management System), instructional video, podcast, social media and email (Aladsani, 2021). These considerable changes bear attention to prioritize the quality of digital capacity, instructional assistance, tutorials, knowledge delivery, social comfort in cyberspace, interaction modality on the internet and teachers' presence in social situations (Van Wart et al., 2020). Therefore, educational institutions are encouraged to provide effective online education, equal learning benefits for students, clear communication among stakeholders and develop student-centered learning (Morgan, 2020).

A study from Adedoyin and Soykan (2020) showed that some students were able to access internet connection and compatible gadgets while others had very limited facilities. As a result, students had difficulty in understanding the content and they preferred to watch pre-recorded videos rather than synchronous meetings. Pre-recorded videos gave them more time to prepare their understanding before class or replay materials to improve mastery (Chung et al., 2020). Another study revealed that students had a hard time focusing on their studies. Different learning settings such as spaces and family habits created distractions. At the same time, they also struggled in managing their time to finish homework. Heavy workloads became one of the negative impacts of online learning since most teachers explored various assessment tools (Hussein et al., 2020). Previous findings have documented sufficient important data toward challenges in online learning. By using those data, governments, educators, and stakeholders are able to make effective decision makings to solve the problems. Some suggestions and recommendations to solve online learning issues involve delivering content through television or radio, facilitating teaching equipment and training for teachers, setting online libraries for students, building distance learning centers and conducting more research on online learning issues to solve more problems (Rahiem, 2021).

However, most studies identified problems, investigated phenomena, and provided solutions based on quantitative approaches. They, for example, identified students' perception toward distance learning by using questionnaires (Mathew & Chung, 2021), mapped students' learning behavior during online learning (Rafique et al., 2021) and tested students' digital learning readiness and metacognitive skills to determine students' performance during online learning (Anthonysamy et al., 2020), (Händel et al., 2020). Most findings and conclusions were based on statistical data. It is therefore essential to add more qualitative data about students 'capabilities in order to review their strength in managing their own learning.

This study offers a different perspective by exploring undergraduate students' competences in conducting online learning through a qualitative approach. The exploration is obtained based on students' reflection toward their efforts in completing their assignments in one semester. Undergraduate students who pursue their study during the pandemic COVID-19 are generations Z. This generation tends to have a high level of learning resilience because they build their desire to achieve goals, supported by external factors such as instructional design, friends, family and teachers, and institution policy (Ang et al., 2021), (Tsang et al., 2021). They have the ability to demonstrate learning endurances by using self-disciplines such as time management, removing distraction and setting boundaries (Gelles et al., 2020). This qualitative research is expected to provide novelty because the data presented a very specific reflection on how students managed

their efforts to finish their projects and gained new insights throughout their processes of learning. Reflection is considered as a self-development process that enhances critical thinking and collaboration (Yaacob et al., 2021). Reflective process promotes students' value and attitude which contribute to future learning (Colomer et al., 2018). As argued by scholars, it is important to integrate social competence skills in educational curriculum to support students' self-efficacy in managing their learning (Nair & Fahimirad, 2019).

RESEARCH METHOD

Research Design

This qualitative study employed discourse content analysis technique which aims to define a text based on particular phenomena (Krippendorff, 2004). As a technique, content analysis provides a new perspective to improve our understanding toward phenomenon or present practical performance. This study explored students' learning reflection to reveal students' survival skills in building effective online learning during COVID-19 pandemic. It investigated students' personal experiences by facilitating them to freely share their learning impressions. It investigated personal stories in a natural setting without any intervention. The stories were shared in a form of written reflective notes. Students narrated their personal efforts in completing their assignments during the COVID-19 pandemic. With an instruction on how to arrange their ideas, students were allowed to share their reflection based on their personal perspective.

Participants

The subjects of this research were undergraduate students from one of the English Language Education Department of a private university of Indonesia. This research focused on those who enrolled in Technology-enhanced Language Learning Course. There were 66 students (52 females and 14 males) in the class, but only 22 students who agreed to participate in this research. Based on consent form data, there were 17 females and 5 males' sophomores who were willing to share their reflective notes as main data of this study. As sophomore students, they are familiar with online learning because they had experienced some online classrooms in the previous semester. They had basic literacy on how to conduct online learning.

Procedures and Instruments

Technology-enhanced Language Learning course is a 4-credit course, conducted in 28 meetings. The main objective of this course is fostering students' skills in developing instructional media. During the COVID-19 pandemic, all materials were delivered online by using synchronous and asynchronous format. In synchronous meetings, instructors used Zoom meetings to share materials and feedback, meanwhile a Google Classroom and WhatsApp group were utilized during asynchronous meetings. The course was designed in 3 main activities: a) exploring the role of technology in learning, b) developing instructional media, and c) demonstrating the use of instructional media. In exploring the role of technology, the activity was that students discussed "why and how technology enhances the learning process". This activity started from meeting 1 to meeting 8. In meeting 9, students moved to the next activity which involved planning and developing a project. Students had six weeks to write their plans, designs and consulted their projects to the instructors.

After completing all activities from meeting 1 to meeting 14, the activity continued to demonstrate their projects to their friends in order to obtain peer feedback. This step was the last activity in the course before the final test. Most of the meetings from week 15 to 28 were peer discussion, consultation session and project revision. At the end of the semester, students wrote their reflective notes in 500-1000 words. They wrote their reflection in three

subtopics: learning challenges, solutions and learning reflection. By presenting the reflection in a sequence, it helped students to frame their stories. To confirm primary data, additional data were obtained through observation on Google Classroom activities and classroom interaction on WhatsApp group. The observation focused on students' participation in submitting projects, responding to announcements, and consultation sessions. Trustworthiness of the data involved triangulation data from reflective notes, observation, and online interaction (Lemon & Hayes, 2020). Reflective notes are the main data, meanwhile classroom observation and online interaction are secondary data to confirm students' competences in building effective online learning. Thus, the triangulation focuses on the consistency between students' reflective notes and students' performance.

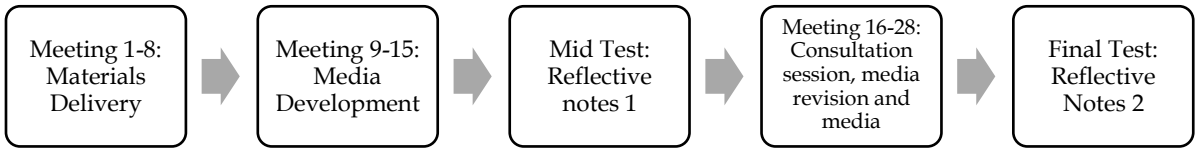

Figure 1. Research Procedure

Students' reflective notes were collected as the main data. Particularly, the notes that described students' reflection before mid-test and after finishing all projects at the end of semester. Observation and online interaction were confirmatory data to analyze consistency between reflective notes and classroom participation. The data were coded by using adapted COVID-19 Online Learning (CoOL) conceptual framework from Tsang et. al., (2021). CoOL conceptual framework views online learning as a system which includes three inputs: 1) students, 2) instructors and 3) institutions (Table 1). Although this study used a similar conceptual framework, the data were coded qualitatively based on students' reflection. Meanwhile, Tsang et. al., (2021) identified CoOL by using questionnaires quantitatively.

The findings were analyzed qualitatively by using a content analysis model from Krippendorf (1989). The steps include: 1) design: defining research context, exploring relevant data and adopting analytical construct, 2) unitizing: defining and identifying units of data, 3) sampling: selecting data to ensure data representation, 4) coding: classifying data based on analytical construct, 5) drawing references: connecting coded data with research phenomenon and 6) validating: validating data content to infer unobserved data (Krippendorff, 1989). The analysis opens an opportunity to explore students' personal competences in building ICT competence. Specific data may help educators to design better instructional design in the future learning.

Table 1. CoOL Conceptual Framework

The input of effective online learning	Components
Students	Interaction: interaction among students and Interaction between teacher-students
Instructor	Course Design: perception, attention, encoding, storage and retrieve of knowledge
Institution	Learning facilities: clear instruction, arrangement updates and technical services

FINDINGS AND DISCUSSION

The data discuss students' reflection in finishing their projects during COVID-19 pandemic. Most of the findings show that students were able to complete their tasks by interacting with peers, consulting with the teacher and understanding the course design. Accordingly, they attained new knowledge and awareness on the importance of technology in education. They also developed a positive attitude toward teamwork skills (Table 2).

Table 2. Students' Reflection

The input of effective online learning	Components	Total responses
Students	Interaction: interaction among students and interaction between students and instructor	7
Instructor	Course Design: perception, attention, encoding, storage and retrieve of knowledge	32
Institution	Learning facilities: clear instruction, arrangement updates and technical services	0

These findings are in line with Tsang et. al., (2021) who state that student-student interaction and course design play a significant role in achieving learning outcomes. Moreover, they also reveal that university support does not bring significant roles in online learning because students mostly expect guidelines from the teacher.

Interaction

Students admit that they gained insight on the importance of technology in learning. They state that technology creates learning flexibility and accommodates more learning styles. However, they confess that it was challenging to finish the project because they needed to follow many steps of media development such as selecting media formats for their projects, choosing online materials for their media, designing visual presentations, operating tools and finding secure license to quote online resources. Some groups were confused to choose between producing a video or powerpoint presentation (Table 3). Meanwhile, other students had difficulties preparing media planning. Therefore, students preferred to conduct their projects in a group to reduce confusion and loneliness. One of the participants stated that "We worked together as a team to find reliable and valid resources and put all of them together". Working in a group contributes to helping students in finishing assignments. It promotes interaction among them because they obtain support from peers to ease their loads. They have opportunities to share ideas, understand each other and distribute tasks. Although it was hard to maintain communication through online platforms, some students used synchronous Zoom meetings and WhatsApp to discuss their tasks with peers. After finishing the assignments, they acquired better awareness toward leadership, teamwork, group mindsets and responsibilities. In addition, students also maintain communication with instructors to receive immediate feedback. Another participant added that "If there is something that I don't understand, I immediately ask the lecturer via WhatsApp chat so that there will be no miscommunication in working on this media project". They believe that interaction is one of the keys in finishing their assignments, as stated by Gelles et. al. (2020).

Table 3. Learning Challenges

Category	Total Answers	Example statements
Selecting effective media	20	"In my opinion, the challenge of developing media is choosing media that are suitable, interesting and good" (choosing media format, ex: video, ppt, podcast, etc.)
Time management	3	"The challenges in developing media that might experience are a lack of time for planning"
Creativity	3	"…looking for ideas takes time…"
Motivation	1	"Internal factors, that is our motivation and how to educate students as well as educating ourselves"

Course Design

During the semester, there were four (4) synchronous Zoom meetings and twenty-four (24) asynchronous sessions. Most of the meetings were conducted in asynchronous meetings due to the university policy. Zoom meetings were used to share main content, meanwhile WhatsApp groups were beneficial for sharing classroom announcements, providing reminders, tracking students' progress, and answering students' questions. To support online interaction, Google Classroom was applied to share content, create assignments, or test and notify feedback. The findings show that course design helps them to finish their assignment but not all students can formulate strategies to achieve learning goals (Table 4). Some groups struggled with stress and conducted trial and errors in media testing. They need more time to arrange learning strategies. After one semester, they finally succeeded in finishing their project by following feedback and instruction.

Table 4. The Example of Students' Answers

Category	Example statements
Course Design (retrieve knowledge)	"I have gained some knowledge from this course such as the role of technology in learning and types of learning media"
Course Design (perception)	"It was quite stressful but fun because I have a very understanding group of friends. I enjoy media development. I can learn and explore more about media and understand how to use it well. Even though it's not enough right now, I hope I can do it better someday"
Course Design (attention)	"Trying to analyze, evaluate media and materials with my group is also one of the important things to realize good learning media. Trial and error by testing the media we designed is a new learning experience for me and it is very impressive"
Course Design (encoding)	"At the beginning of learning, I tried to get to know English learning media and also began to develop the learning media"
Course Design (storage)	"The steps of making the learning media, delivered by the lecturer, were also very helpful during the process of making the media"

These findings are in line with Tejedor et. al. (2020) who state that teachers actually appreciate students' ability in handling technical problems, but students still should improve their ability on critical and reflective utilization of technology. Aguilera-Hermida (2020) adds that there is a lack of process in perceiving the learning process because students actually prefer face-to-face interaction more than online. It implies that the acceptance of online learning among students needs to be improved because most students still consider learning as a process of finishing tasks only.

Learning Facilities

In terms of institutional support, no students share reflection on learning facilities from university because the reflection focuses on their personal effort in finishing their projects. During the pandemic, students accessed materials and learning instructions from their home, thus, they did not use learning facilities from university. They mostly relied on online platforms to conduct learning. However, some studies have proposed several supports for students in online learning settings. One study applies feedback technique by using virtual Affective Pedagogical Tutor (APT) to improve students' self-reflection on metacognitive learning activity. The results show that emotional feedback can enhance students' conceptual and personal changes (Daradoumis & Arguedas, 2020). Another study implements online co-reflection techniques which provide opportunities for students to respond to peers' postings through MOOC (Massive Open Online Course) and online platform. The results show that students' achievement goals orientation and community identification promote students' in-depth co-reflection (Huang et al., 2021). Moreover, an interesting finding from Yaacob, et.al (2021) suggests that teachers could foster collaborative activities to improve knowledge exchange, increase pedagogical methods and theories, improve understanding of students' characteristics and nurture self-development. A study from Howell (2021) applies active learning by creating a variety of classroom activities such as discussion, games and group work. Mindfulness exercise prior learning encourages students to pay attention to their breathing in order to eliminate distractions. The result of the study shows that students have a positive perception toward the course. They feel established engagement throughout the process due to reasonable workloads, good preparation and memorable materials (Howell, 2021). In sum, online learning implementation should elaborate on the balance proportion in interaction, course design and learning facilities to assist students in revealing their learning potential.

CONCLUSIONS

The study aims to explore students' competences in conducting online learning during pandemic COVID-19. The findings reveal that students perceive course design and interaction as the most dominant components in online learning. Students rely on the clarity of learning activities to achieve learning goals. In addition, they also maximize their interaction among peers to ensure understanding. The findings imply that students view online learning quality based on learning experiences. They retrieve knowledge and gain inspirational changes on teamwork skills.

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