

## Pre-Service EFL Teachers and Faculty Members' Views on the Challenges and Complexities of Online Research Supervision amid COVID-19

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Undergraduate research supervision has long been one of the most intricate learning issues due to its complexities and challenges. The policy to learn from home during COVID 19 pandemic could have increased the complexities and challenges. This study aimed at discovering the nature of problems and challenges of undergraduate research supervision in the English Education Department of Universitas Kristen Indonesia Jakarta, Indonesia. Employing a qualitative method using a content analysis approach, this study was conducted in October to November 2020 involving 5 faculty members and 15 students who participated in the research supervision held amid COVID 19. Data from the faculty members were gathered through a questionnaire and semi-structured interviews, and data from the students were gathered using a questionnaire and focus group discussions. The obtained data were analyzed using the qualitative content analysis technique. The results revealed that the students viewed the online undergraduate supervision during COVID as very complex and challenging due to their limited research and writing skills, inability to access the research fields, inadequate ICT skills for research, absence of face-to-face communication, and ICT constraints. Both supervisees and supervisors generally viewed the online research supervision was more complex and challenging than the traditional face-to-face research supervision.

**Keywords:**

*EFL, ICT, qualitative, undergraduate research supervision*

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## INTRODUCTION

Undergraduate students' participation in authentic research has been highlighted as a "high-impact" educational practice for it develops the students' critical-thinking and communication skills (Hunter et al., 2007; Thiry et al. (2011), boosts students' engagement and to enrich their learning experiences (Lopatto, 2007), promotes active learning, self-confidence, and pursuit of science careers (Lopatto & Tobias, 2010), contributes to the students' personal and professional gains (Seymour, et al., 2004; Hunter et al., 2007), promotes collaboration and leadership, encourages logical analysis, improves student participants' written and oral communication skills (Ishiyama, 2002), and enhances problem-solving skills, literature and language skills, and personal initiative and communication skills (Bauer & Bennett, 2003). Russell, Hancock, and McCullough (2007) accentuated that undergraduates involved in research have higher ability than those uninvolved in research. Research has also shown that undergraduates' engagement in research can deeply affect their career choices and their contributions to their disciplines and society (Taraban & Blanton, 2008).

Due to its importance, students' experiences in authentic research has become a widely accepted goal of most colleges and universities. Conducting a research project is made mandatory to undergraduate students by asking them to complete an undergraduate thesis in partial fulfillment of the academic requirements. The scope of the research considerably varies from one discipline to another, and from one student to another. The research can include conducting experimental work, performing a simulation study, assisting graduate students in their research, completing tasks involving data collection and analysis, and so on (Kaul, et al, 2016). The research project is always taken in the final semester under one or more faculty member supervision.

The faculty-mentored research is now common among students in almost all disciplines, including the students in the pre-service teacher education. The provision of experiences through the faculty-mentored research will hopefully provide a basis for the prospective teachers' knowledge and practices development (Radnor, 2004). Their ability to complete the faculty-mentored research can be regarded an indicator of their competence to research the topics related to their field. That competence is very crucial for them when they have been in the teaching profession as it promotes their professional development and pedagogical activity. Ulla (2018) accentuated that by doing research, teachers will obtain large opportunities to enhance their teaching practices and improve their students' learning and school performance. In the EFL context, Murphy (2001) stated that teachers actively involved in research at their school are thought to have a greater capacity to study, evaluate, and assess their teaching pedagogies and practices. This capacity will empower them to adjust and improve their ways of teaching, which, in turn, is likely to have a positive effect on students' learning and success (Ndayimirije & Bigawa, 2020).

Due to the importance of research supervision, numerous studies on various aspects of undergraduate research supervision have been conducted (e.g. Ishiyama, 2002; Kaul et al, 2016; Maltese et al, 2017; Pardede, 2012; Ulla, 2018). However, these studies focused largely on students studying on-campus. Despite the fact that the traditional face-to-face research supervision is different from online supervision since the latter involves not only the interaction between students and supervisors but also with technological tools (Heinze & Heinze 2009), studies on online research supervision are scarce. What is more, the

growing number of students taking distance learning and the extensive infiltration of technology into learning have been increasing the demand for empirical ideas to implement effective online research supervision. Thus, studies on online research supervision are urgent to conduct.

Among the few studies on online research supervision available in literature, most focus on research for doctoral degree (Park, 2015; Dowling, & Wilson, 2017; Prinsloo & Maritz, 2015; Sim, & Stein, 2019; Stein, & Sim, 2020) and for master degree (Donnelly & Fitzmaurice, 2013; Roets, 2013; Gumbo, 2018), but, to the researchers' knowledge, no study has been conducted focusing on undergraduate education level, not to mention on the pre-service EFL teachers programs. To fill in the gaps, there's a huge need to investigate online undergraduate research supervision.

This study attempted to investigate the students and faculty members' view on the complexities and challenges of undergraduate research supervision in the EED UKI Jakarta. The focus was to answer the following research questions:

1. What is pre-service EFL teachers and faculty members' view on the challenges of online undergraduate supervision process amid COVID 19 in EED UKI?
2. Did the pre-service EFL teachers and faculty members find the online undergraduate supervision complex or simple?

## **METHODS**

This study employed a qualitative method using content analysis approach. The design fits the study for it allows the participants to express their views on the challenges and complexities of the online undergraduate supervision process amid COVID 19 amid COVID 19 in their own words. Conducted in October to November 2020 in the English Education Department of Universitas Kristen Indonesia (EED UKI), Jakarta, Indonesia, the study involved 15 undergraduates and 5 faculty members who participated in the online undergraduate supervision in EED UKI held in March to August 2020. These key informants were selected using the purposeful sampling technique.

Data were collected using a questionnaire consisting of 15 open ended questions, semi-structured interviews and focus group discussions (FGDs). Data collection began by asking each participant to answer 15 open-ended questions through an online questionnaire. The questions started with two general questions: (1) "Based on your experience, what is your view on the online undergraduate supervision process amid COVID 19? Easy, hard, OK, interesting, challenging, boring, etc.?" and (2) "Did you find the online undergraduate supervision complex or simple?" After these two questions, the participants were asked to describe their view on the supervisees' motivation, the online tools employed, and their expertise, Inquisitive questions were also used to deeply explore relevant factors they perceived as significant, including processes, conditions, skills, and constraints.

To get more insights for triangulating, clarifying, and elaborating the data obtained through the questionnaire, semi-structured in-depth interviews and focus group discussions (FGDs) were conducted via a live meeting tool. The interviews were held with the faculty members. The FGDs were held three times involving five different supervisees in each FGD. Each interview and FGD began with the two initial questions addressed in the questionnaire. Then the next stages of the interview and FGD process was mainly reliant on the questions that arose in the interaction between the interviewer

and interviewees or participants. After gaining permission from the participants, each interview or FGD was recorded and transcribed word for word. After that, documents verification and coordination for subsequent interviews or FGDS were completed. Each interview lasted for about 30 minutes, while each FGD lasted for 45 minutes on average.

The obtained data was analyzed using the content analysis technique proposed by Miles et al. (2014), in which qualitative data analysis is carried out in three concurrent flows of activity: (1) data condensation, (2) data display, and (3) conclusion drawing. In this study, data condensation was conducted by collecting, simplifying and extracting the data obtained from the questionnaire and the interviews and FGDs' transcriptions. Data display phase was carried out by systematically presenting the information obtained in the previous step. The third step, conclusion drawing, was conducted by making conclusions based on the identified problems and the result of the discussions.

## RESULTS

Based on the data condensation and display process, the findings related to the online undergraduate supervision process in this study were classified into five categories/themes: (1) contextual problems, (2) research motivation and competence, (3) supervisors' roles, (4) ineffective communication, and (5) constrains due to ICT use (Table 1). Some of the sub-categories/subthemes are substantially overlapping. Their categorization in this list was made for convenience sake.

Table 1.  
Emergent Themes and Sub-Themes Based on the Analysis of the Participants' Responses

Themes	Sub-Themes
1. Contextual Problems	a. supervisors' workload b. limited access to the research fields c. lack of resource
2. Research motivation and Competence	a. improper supervisees' motivation b. supervisees' deficient background knowledge c. supervisee and supervisors' insufficient research skills, d. supervisees' deficient academic writing skills e. supervisees' weak self-assessment.
3. Indefinite supervisor's roles	a. supervisors' roles ambiguity b. supervision weak structure.
4. Ineffective Communication	a. reduced social interaction b. inadequate frequency of synchronous supervising session c. delayed responses d. minimum peer interaction.
5. ICT Constrains	a. inadequate ICT skills b. lack of internet quota c. slow internet signal

### 1. Contextual Problems

The findings in this study show that the complexity and challenges in the undergraduate thesis supervision come out from contextual problems. This category

includes three subcategories: supervisors' workload, limited access to research fields, and lack of resource.

The first subcategory of the contextual problem is the supervisors' workload. Besides guiding some students in the research supervision, every faculty member should also teach two or three classes, do some administrative tasks, and conduct their own research and publication. Consequently, they sometimes found it hard to meet the supervisees' expectation to get instantaneous evaluation and feedback in many stages of the research process. Faculty Member No. 2 stated: "To provide a good and satisfactory supervision, we need time to reflect the supervisees' progress, identify their problem, and provide appropriate feedback. But the obligation to handle other works makes it hard to pay full attention to the supervising process." This is clarified by one of the supervisee: "I think, to provide an effective online research supervision, the advisors should provide more time. Of course, they don't need to put their other works aside, but they need to realize that we need their prompt feedback and suggestions to keep our research project running (Student No. 3).

The second subcategory is the supervisees' limited access to the research fields. Due to COVID 19 outbreak, they could interact with their research participants via online communication only. Since the research designs (such as experimental and action research) some students had prepared could not be implemented due to schools closure amid COVID 19 outbreak, they had to change their research design. One of them said: "I had composed and presented an action research proposal. But COVID 19 epidemic made it impossible for me to conduct it. So, I had to go the extra mile to replace it with a new research proposal using another design I am quite familiar with—a correlational design" (Student No. 14).

The last subcategory of the contextual problems is the supervisees' lack of resources, especially in obtaining the latest references. The learning or working from home policy amid the COVID 19, did not allow them to go and borrow printed books from any library. Unfortunately, most of them were not a member of any e-libraries having the references they needed. Therefore, the only solution was to buy them online. Those who could not afford the references should change their research topic, and it took a long time, as Student No.1 put it: "My supervisor asked me to use references not older than 10 years. Most references I had related to my topic were published more than 10 years ago. It's possible to buy new references online, but, the price of the references was beyond my budget.

## **2. Research Motivation and Competence**

The second theme causing online research supervision concerns with research motivation and competence. This category comes up from the subcategories of: improper supervisee's motivation, supervisees' deficient background knowledge, supervisee and supervisors' insufficient research skills, supervisees' deficient academic writing skills, and supervisees' weak self-assessment.

The findings from the questionnaire indicate some of the supervisees' inadequate motivation to complete their research project. Although all of the supervisees' believed they were highly motivated to complete their research project, 9 (60%) of them had the instrumental, i.e., they wanted to complete the project only for the sake of fulfilling the requirements to graduate from the study program, and the other 40% had the 'integrative

motivation' or a positive attitude to produce a high quality undergraduate thesis that contributes to EFL teaching field. One of them stated, "Well, as far as I could pass the undergraduate thesis oral exam using the research report, that's enough" (Student No. 9). On the other hand, Student No. 3 who had the 'integrative motivation' stated: "I know that producing a high quality research report is challenging. However, if I could graduate and contribute to EFL field by producing a high quality publication, it's worth trying".

Most supervisors participated in this study viewed that many of the supervisees did not have appropriate background knowledge to their research topics. To a certain extent, this was due to their need to change the research topics they had previously prepared but could not be followed up due to COVID 19 outbreak.

The next subcategory of inadequate research competence is the supervisee and some supervisors' insufficient research skills. Three (60%) of the supervisors thought they have adequate research skills to supervise their supervisees' research no matter what the research design was. The other 40% viewed that they were capable to guide the supervisees in some research designs only. One of the latter said: "I think I'm competent enough to guide the supervisees in conducting qualitative research. Guiding research that require statistical analysis is beyond my capability" (Faculty Member No. 5). In the supervisees' perspective, however, all supervisors were competent to supervise them doing their research. Many of them viewed the supervisors are highly skillful.

Unlike the supervisors, many of the supervisees were considered to have inadequate research skills. According to the supervisors, about 47% of the supervisees' were weak in determining the research gaps, evaluating the sources credibility and reliability, synthesizing and summarizing information, and drawing conclusions. On the other hand, only about 33% of the supervisees thought they lacked research skills, and they viewed determining the research gaps, synthesizing and summarizing information, and drawing conclusions were the most difficult.

The third subcategory of the inadequate research competence is the supervisees' deficient academic writing skills. The supervisors estimated that almost 60% of the supervisees had problems in expressing their ideas effectively in the formal academic style, paragraphing, using appropriate hedging, using the suitable diction, paraphrasing, and in-text referencing. One of the supervisors stated: "I found guiding the students to report the study in an appropriate academic writing was one of the most exhaustive activities in supervising process. Sometimes I had to put dozen of notes in each page of their drafts" (Faculty Member No. 1). This is supported by most supervisees who admitted their academic writing skills were inadequate. One of them said: "I spent almost two and a half month for finishing my research report. Anytime my draft was returned, it was full of notes and marks indicating errors in my writing. Many times I had to checked thesaurus to find the correct dictions. I also found paraphrasing ideas cited from the references difficult" (Student No.6).

The final subcategory included the inadequate research competence is the supervisees' weak self-assessment. All supervisors involved in this study agreed that self-assessment is a very effective way to advance one's research competence. Most of the supervisees also agreed with the positive effects of self-assessment efficacy to research competence advancement. Despite this, they often ignored it because they thought it impractical as it takes time and requires experiences and the ability to create the assessment criteria. Student No. 6 said: "I was supposed to complete my undergraduate

thesis in one semester. To save time, wasn't it better if the advisors directly showed the flaws in my report and gave the solutions?"

### 3. Indefinite Supervisors' Roles

The complexities and challenges in the online research supervision are also caused by indefiniteness of the supervisors' roles. Two subcategories contributed to this category: supervisors' roles ambiguity and supervision weak structure.

The findings indicate that supervisors' role ambiguity was caused by two factors. First, the role of supervisor was interpreted differently by different participants. Second, many of the participants did not realize the flexible nature of a supervision's role that is required to adjust the supervision with the existing situation and context. Most participants tended to agree that a supervisor should be an information source, a motivator, a guide, an evaluator and an educator. However, the supervisors interpreted most of these term differently from the supervisees. Faculty Member No. 1, for instance, stated: "I agree that a supervisor should a source of information and a guide. But the supervisees should not too heavily rely on their supervisors as the only source of information, and expect them to give detailed direction on every step of their project. Faculty Member No. 5 added: "A supervisor must be an evaluator indeed, but the supervisee should not misinterpret this by expecting their supervisors to be an editor of their report drafts."

The interpretation discrepancy is also indicated by some supervisees' expectation for having their supervisors as the solver of all problems. Supervisee No. 5 said: "Based on their experience in completing many research, the supervisors must have got profound knowledge and skills to guide me in every step of my research easily". Another one stated, "Rather than simply assisting me to complete my project, through the project, my supervisors put me into a long process of developing various skills and knowledge" (Student No. 1).

Many of the supervisees also seemed to be unaware of the flexible nature of a supervision's role, by which a supervisor deals with different supervisees in different ways, depending on the latter's perceived motivation and level of understanding. One of the supervisees stated, "One of my classmates told me that her supervisor was willing to spend a long time explaining her some topics in details. But another friend of mine stated that her supervisor often merely informed her where to find information and gave her some direction for what to do next. How can different supervisors have such contrastive supervising styles?" (Supervisee 14).

The second subcategory of supervisor's role is supervision weak structure. Some of the supervisees in this study thought their supervisors did not provide quite specific supervision format that clearly describes the supervisee and supervisor's duties and when the plan for interaction. This sometimes made them uncertain what to do before they could consulted the supervisors, as Student No. 3 put it: "The study program did provide us with a supervision guideline. But it just describes the procedure in a general way. I think, every supervisor needs to prepare a more specific guideline for every student that suits the research design she or he is undertaking." Other supervisees, however, preferred to have a flexible supervision schedule. Supervisee No. 5, for instance, sometimes skipped one or two sessions of the mentoring scheduled once a week because at that time he could work independently.

#### 4. Ineffective Communication

The participants in this study viewed communication was one of the most significant factors effecting the supervising process. Four subcategories emerging challenges in this domain include the reduced social interaction, inadequate frequency of the synchronous supervising session, delayed responses, and minimum peer interaction.

The participants in this research thought that the absence of face-to-face interaction in the online supervision tended to reduce social interaction between supervisee and supervisor and supervisee with other supervisees. Faculty Member No. 3 said: "In the conventional supervision, the use of verbal and nonverbal interaction with their teacher and friends provides students with immediate interpersonal communication. The disappearance of these elements in online supervision can cause the students to be distracted, difficult to engage, and lonely." Student No. 12 supported this by stating: "Most of the interactions in the supervision merely concern with research activity. We rarely interacted for social purposes."

The online research supervision in this study was dominated by asynchronous communication through written messages in the discussion forums of the learning management system, WhatsApp and emails the participants could held anytime. Synchronous communication through live meeting was also held, but it was periodically scheduled once a week or once in two weeks. Many of the supervisees thought the portion of the synchronous supervising session should have been added to make the supervision more effective. Student No. 7 said: "Although synchronous communication is not as effective as a face-to-face communication, the supervisors' facial expressions and tones made their explanation more clearly than through written explanation. I wish I could have got more synchronous supervising sessions."

The third subcategories of ineffective communication is delayed responses of both supervisors and supervisees. One of the supervisees said: "When I had finished reporting my findings, I soon sent it to my advisor to get feedback. I expected to have it back soon so that I could make any necessary revision proceed to writing the discussion section. But I should wait for two weeks to get it back. If only the draft was reviewed and returned to me soon, I must have completed the discussion section draft." The supervisors were also disappointed when the students responded lately. Faculty member No. 3 said: "Most students expected me to review and return their draft instantly. Didn't they realize that reviewing a report consisting of dozen of pages takes time and I supervised eight students at the same time? Didn't they know that the more errors and incongruities they made in the draft, the longer it takes to revise?"

The fourth factor contributing to ineffective communication is minimum peer interaction among the students. Although the supervisees used to interact with their friends in the beginning, they soon limited it because they consider it a waste of time. The supervisors, on the other hand, viewed students' peer interaction is important in online supervision. Faculty Member Number 3 elucidated that she always encouraged his supervisees to communicate with their friends as a way to socialize and exchange idea. She argued that peer interaction in online learning not only diminishes loneliness and increases engagement but also hones critical thinking and creativity.



## 5. ICT Constraints

The final category of the findings concerns with ICT constrains. It includes three subcategories: inadequate ICT skills, lack of internet quota, and slow internet signal. These three factors contributed significantly to the complex and challenging nature of the online research supervision.

Although the participants found many of the ICT tools and software employed in the research process were easy to use. However, some others were complicated and took a long time to master. One of the supervisees stated: “Participating in the LMS and sharing files through Google Drive were easy. But learning to operate SPSS software and Microsoft Excel for analyzing data drove me crazy” (Student 15). Another supervisee acknowledged that she finally had her data analyzed. In line with this, Faculty Member No. 2 said: “I guess the supervisors and supervisees should have specific training for operating data analysis software before involving in an online research supervision.”

Another factor causing the online supervision challenging concerns with internet quota. Running out of data plan had caused frustration among the supervisees. Student No. 10 said, “Before COVID 19 pandemic, on average, I needed only 25 GB of internet quota per month to facilitate all my daily online activities, including to join the online sessions of some blended learning classes and for social and entertainment activities. But during the pandemic I needed even more than 50GB, and it was very expensive for me.” The supervisors also feel the same. “Spending up to 100 GB of internet data per month was financially burdensome for us”, said Faculty Member No. 5.

Internet speed could cause a serious problem in the supervision process, as one of the supervisees said: “Slow internet connection not only hindered me to search information in the internet but also hurdled my interaction with my supervisors and friends. It even interrupted my communication with the supervisors several time.” In line with this, most of the supervisors agreed that slow internet connection could damage the supervision process. “It was stressful when slow internet connection interrupted your live discussion or when you were using a data analysis software.”

## DISCUSSION

Findings in this study revealed various complexities and challenges in online undergraduate research supervision at EED UKI viewing from the students and faculty members’ perspective. The major themes cover contextual problems, inadequate research competence, indefinite supervisors’ roles, ineffective communication, and ICT constrains.

The contextual problems come out from the supervisors’ workload, limited access to the research fields, and lack of resources. This findings indicate that based on the students’ and faculty members’ views, one of the causes of the complexities and challenges in the online research supervision concerns with the systemic and environmental dilemmas. The first subcategory is related to the systemic problem because the department assigned the faculty members too heavily many teaching, administrative and research works while they were supervising 8 to 10 students. Having too heavy workloads, the faculty members had limited opportunity to reflect the supervisees’ progress, identify their problem, and provide appropriate feedback. This finding confirms the research results of Changiz, et al (2003) showing that supervisor’s shortage of time causes limitations in doing and supervising research projects.

The second, the supervisees' limited access to the research fields was essentially a force majeure. It emerged mainly due to COVID 19 outbreak. Fortunately, the study program immediately took a correct policy, i.e. allowing the students to change their research designs.

Similar to the second category, the third one, i.e. the supervisees' lack of resources was also caused by COVID 19 outbreak. If only the study program could provide wide access to various comprehensive online library to the students, this problem might have been easy to solve. In relation to this, building a comprehensive database including relevant e-books, e- journals, e-thesis and dissertation (ETD), e-zine (magazine), e-newspapers, e- reference sources, etc. should be considered by EED UKI.

The second category is related to research motivation and competence consisting of improper supervisee's motivation, supervisees' deficient background knowledge, supervisee and supervisors' insufficient research skills, supervisees' deficient academic writing skills, and supervisees' weak self-assessment. This findings show that some factors causing the online research supervision to become complex and challenging were related to the students and supervisors' personal problems. According to Wenderholm (2004), these factors are the most problematic and critical aspects of undergraduate research.

The subcategories of this theme mainly belonged to the students. First, although the majority of them believed they had proper motivation in conducting their research that motivation is predominantly instrumental. All they wanted was to complete the research to graduate. This drove some of them not to do their best. This condition then led them not optimally try to develop the necessary knowledge and skills.

The supervisors were not free from personal deficiency. Although all of the students believed all of the supervisors were highly skillful so that one of them stated: "My supervisors had more than enough knowledge and skills in helping me conducting my research" (Student No. 1), 40% of them thought they were capable to guide the supervisees in some research designs only and running statistical operation was beyond their ability.

This finding, that the online research supervision also emerged from the students and faculty members' personal attitude, knowledge and skills, is in line with Thomas and Nelson's (2001) observation results revealing that one the most common challenges in undergraduate research supervision is the supervisors' inadequate relevant research skills and or knowledge and the results of Anderson, et al (2006) study reporting that some of the most crucial challenges faced by students in conducting research were their improper commitment and motivation to do the research and inadequate theory in the area being researched on.

The third category of factors causing research supervision complex and challenging concerns with the supervisors' roles indefiniteness emerging from two subcategories: supervisors' roles ambiguity and supervision weak structure. These factors emerged because of interpretation discrepancy between the students and the supervisors. For instance, although a supervisor plays the role as a source of information and a guide. But this does not mean the supervisees can heavily rely on their supervisors who can give them detailed direction on every step of their project and direct solutions to their problem.

The second subcategory, the supervision weak structure, was partly caused by the fact that the students did not yet have proper experience in conducting research. This

probably caused them to think that research supervision schedule is similar to a regular class time table. In other words, they were not yet aware the importance of a flexible supervision schedule. Of course the supervisors and the students should develop an agreed plan and schedule. But since research process is dynamic, both sides should always adapt to any change they met.

The fourth category of factors causing the online research supervision complex and challenging in this study is related to communication. The first subcategory reveals that the online communication held in the supervision tended to reduce the social interaction between a supervisee and supervisor and between a supervisee with other supervisees that caused the students to be distracted, difficult to engage, and lonely. The second subcategory indicates the interaction in the supervision was dominated by asynchronous communication, which, according to the students, was not as effective as synchronous communication. The third subcategory demonstrates that both supervisors and students sometimes responded late, and this could cause stress particularly to students. The last subcategory shows that although the supervisors used to encourage the students to share ideas with their friends, most students admitted their peer interaction waned with the course of the research process.

These findings indicate that both students and supervisors need to include social connection elements in their communication during the research supervision. Sung and Mayer (2012) stated that social interactions are at the heart of every learning process, including online learning. To succeed online supervision, it should not be designed as a task focused and isolated activity because students in online learning also require social connections (Kreijns et al, 2007). In line with this, providing the students with more synchronous communication can help. Synchronous learning activities lack of synchronicity in communication, it may increase the sense of physical separation (Sung and Mayer, 2012).

The last category of factors emerging the online research supervision complex and challenging is related to ICT constrains which consist of inadequate ICT skills, lack of internet quota, and slow internet signal. These three factors play a significant role in the online research supervision because the supervision involves not only students and supervisors' interaction but also the interaction with technological tools (Heinze & Heinze 2009). Based on the participants' responses, it is obvious that the online supervision requires the supervisors and students to be able to use all ICT tools and software necessary in the research process, have sufficient internet quota and an access to stable internet connection.

## **CONCLUSION AND RECOMMENDATION**

Based on the findings and discussion above, it could be concluded that the online undergraduate supervision during COVID 19 as complex and challenging due to the unstructured and improper context, environmental dilemmas due to COVID 19 pandemic, inadequate research skills, ICT skills and writing skills, some ICT issues, and the educational climate where the individuals' roles, duties and responsibilities are not clear and explicit. Such situation lead some participants to stress and lack of critical thinking, initiative, and reflection so that, although they managed to complete their research, they did not feel very satisfied. Doing such online research requires an appropriate context of

all aspects, commitment and responsiveness of both supervisors and supervisees, and good ICT supports.

To succeed online research supervision in the future, on the basis of the participants' views and suggestions, it is recommended that EED UKI should provide specific trainings in running statistical analysis software and mentoring students effectively through in online environment for the faculty members involved in the supervision. There is also a need of facilitating students to involve in lecturers' research and participate in online research seminars and conferences to enrich their experience and refine their research skills. Initiative to invest in building a comprehensive online database to enhance students' opportunity to access updated references and materials is also worth considering. EED UKI is also recommended to arrange orientation session to freshmen to acclimate them with the online environment and technology. Such program is needed to let them learn how to work independently and effectively. Finally, providing effective students with orientation and refresher concerning research and the skills and technological tools at the beginning of the undergraduate research project is also recommended.

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