

Online Discussion Barrier in Indonesia: Does It Had The Same Walls?

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Abstract

Distance learning on COVID-19 pandemic has not shown optimal results. Most popular methods used in online learning is online discussion. Some of barriers to online discussion have been described by many experts. These obstacles should be practical mitigations in online discussions but, is the formula quite acceptable in developing countries? This study aims to understand the barriers to learning experiences that apply the online discussion to a developing country context. This study used a phenomenological method with 60 participants who were students. The sampling technique used purposive sampling using an open questionnaire and observation. The results, factors made students participating limited in online discussions in developing countries increased, are (1) unstable internet network; (2) Low self-efficacy; (3) Financial condition; (4) Boredom; (5) Lack of understanding of netiquette; (6) Different interpretation of messages. These findings complement what previously formulated by the previous expert.

Keywords

Text based online discussion, Distance learning, Challenge.

1. Introduction

Many approaches often used in traditional classrooms can also be effective in virtual environments. However, it should be noted how these practices to teaching and learning process in face-to-face classes, does not eliminate these practices in online classes (Pace et al., 2020). Online discussion is the most popular activity used by lecturers to teach during this period (Clark, 2001; Langford & Damşa, 2020). These practices often use social media, video conferencing, instant messaging, social media platforms, and learning communities, where group's member join in a virtual environment to communicate, talk and listen to a topic (Huang et al., 2020). Online discussion is often used as a research subject because its potential to develop knowledge so that, this approach can replace face-to-face interactions in classes (Darabi et al., 2011).

Online discussion has been used successfully as an integrated part of online learning in developed countries such as Europe, America and several Asian countries. For example, research from Lai (2015) in New Zealand examined the construction of knowledge from the online discussion process in doctoral programs, finding that text-based online discussions were successful at enhancing knowledge construction at a higher level. This success cannot be separated from two reasons. First, developed countries have long experience and researched about online discussions even before the pandemic of COVID-19. For example, online discussion was investigated in US by Hara et al (2000) in 1998 at educational psychology class. Second, sufficient access to facilities for support online learning such as devices, internet connection and student-instructor ICT competences. As evidence, internet access per household in Europe reaches 85%, with the Netherlands and Luxembourg having household internet access up to 97% (Johnson, 2021; Vasilpa, 2016). Facilities in teaching and learning process are an important factor (Retnawati et al., 2017).

On the other hand, developing countries in normal situation are trying to get out of various multidimensional crises such as education, health, socio-economic and other sectors, now have to deal with the COVID-19 crisis (Shofwan et al. 2021). In Indonesia, online learning faces many challenges such as unstable internet connections, low literacy in general and digital literacy in particular, and financial situation of student families which has a direct impact on the availability of internet facilities (eg, laptops, smartphones and other gadgets) and internet quota (Atmojo & Nugroho, 2020). The same problems are faced by developing countries such as Brazil (Malta Campos & Vieira, 2021), Mexico (Dias et al., 2020) and many developing countries in Oceania and Africa (Aristovnik et al., 2020). Thus, without identifying online discussion challenge in developing countries, it may occur again in a other place.

Indonesia's geographical conditions which formed by thousands island make equal access and facilities limited. Household internet access in Indonesia is still uneven (Central Bureau of Statistics, 2018) and only centered on the Java (main island) (Hermawan et al., 2018) For example, the 4G signal is evenly distributed well on Java island because it prioritizes densely populated areas prefer to less populated areas (Khatri, 2019). Many studies conducted on the online learning process in Indonesia prove that various difficulties and obstacles are caused by unstable internet connection (Jhon et al., 2020; Kusumaningrum & Wijayanto, 2020; Pratiwi, 2020; Purwanto, 2020; Rosali, 2020). Even though, internet facilities are needed by teachers in developing countries to improve their learning instruction (Onojah et al., 2021)

Previous studies on learning instruction by using online discussions in Indonesia during the COVID-19, Aan Widiyono (2020) found various difficulties and obstacles such as slow response of lecturers when responding to students, not being in time to start discussions, very limited study materials, monotonous discussion. and full of assignments. According to that research, the difficulties and obstacles are caused by instructor (Djibu et. al, 2019). However, online learning difficulties and obstacles in developing countries have a wider scope, for example, technological literacy and competency challenges, planning, implementation and evaluation challenges and belief challenges (Jhon et al., 2020). There are only limited numbers of studies that address the online discussion challenge in developing countries.

Long before “moving online” education and COVID-19 pandemic, Khe Foon Hew et al (2010) have formulated several barriers in online discussion through analysis of 50 empirical studies to identify factors causing limited student contributions are, 1) found no benefit in discussing; 2) Lecturers and students behavior; 3) Personal Traits; 4) Difficulty in keeping up with the discussion; 5) Not knowing what to contribute; 6) Exhibiting surface level thinking or low-level knowledge construction; 7) Technical aspects. These obstacles should be practical mitigations in online discussions but, is the formula quite acceptable in a developing country like Indonesia? This study seeks to complete the barriers to online discussion.

2. Literature Review

2.1 Online Discussion During COVID-19 Pandemic

Online discussion is a method of projecting bulletin boards so that students can communicate and collaborate with respond and post messages on virtual environment (Chen & Chiu, 2008). The main characteristic is to provide students to communicate and collaborate without face-to-face interaction wherever they are. This interaction facilitates students to exchange messages, ideas, opinions, provide feedback and ask questions in online learning environments (Gao et al., 2012). The use of online discussions has been widely accepted in the world of education (Gao et al., 2012; Green & Hughes, 2012; Yu et al., 2016). Some reasons for using online discussion in education are promoting higher levels of construction, developing thinking skills, and solve structured problems (Hew & Cheung, 2011), training gather and organize relevant data (Hara et al., 2000), promoting critical thinking skill (Chen & Chiu, 2008; Guiller et al., 2008). These skills are acquired if students are involved and feel comfortable discussing online (Hew & Cheung, 2012).

Online discussions are inseparable from some challenges. From the instructor's perspective, the challenges in conducting online discussions can be identified i.e. minimal involvement in discussions, limited interaction between participants, low contribution, lack of academic focus (Verenikina et al., 2017), and lurking (Küçük, 2010). This challenge needs to be identified more thoroughly so that we can find out the cause of the challenges. Yoo & Jin (2020) writes that students difficult to interact among participants and understanding the messages. However, that

explanation has not been specific about what their difficulties to interact with and what kind of messages that difficult to understand. Explanation about student's challenge contribute in online discussion with fairly specific was formulated Khe Foon Hew et al (2010) through analysis of 50 empirical studies to identify factors are, 1) found no benefit in discussing; 2) Lecturers and students behavior; 3) Personal Traits; 4) Difficulty in keeping up with the discussion; 5) Not knowing what to contribute; 6) Exhibiting surface level thinking or low-level knowledge construction; 7) Technical aspects. However, it is necessary to study the essence by means that includes several dimensions to identify the barriers of limited student contribution. Online learning problems during COVID-19 involve many multidimensional problems(Jhon et al., 2020)

In this study, online discussions are conducted asynchronous text-based group discussions so that not all participants have to be present at the same time to discuss material and problems; But it has clear expectations and maturity dates. In one day, the participants have a schedule of more than two courses so that the process of participating in discussions is limited to a duration of 120 minutes. Research by Hew & Cheung (2011) found no correlation between the duration of online discussions and the frequency of higher level knowledge construction (HOTS). The stages of the discussion are a modification of the stages formulated by Hew & Cheung (2012) which have been used in various kinds of lectures ranging from diploma to postgraduate programs during the last 12 years; The modified steps in the "face to face tutorial" section were eliminated due to the closure of schools and faculties to prevent the spread of COVID-19. The stages of implementing online discussion learning can be seen in Figure 1.

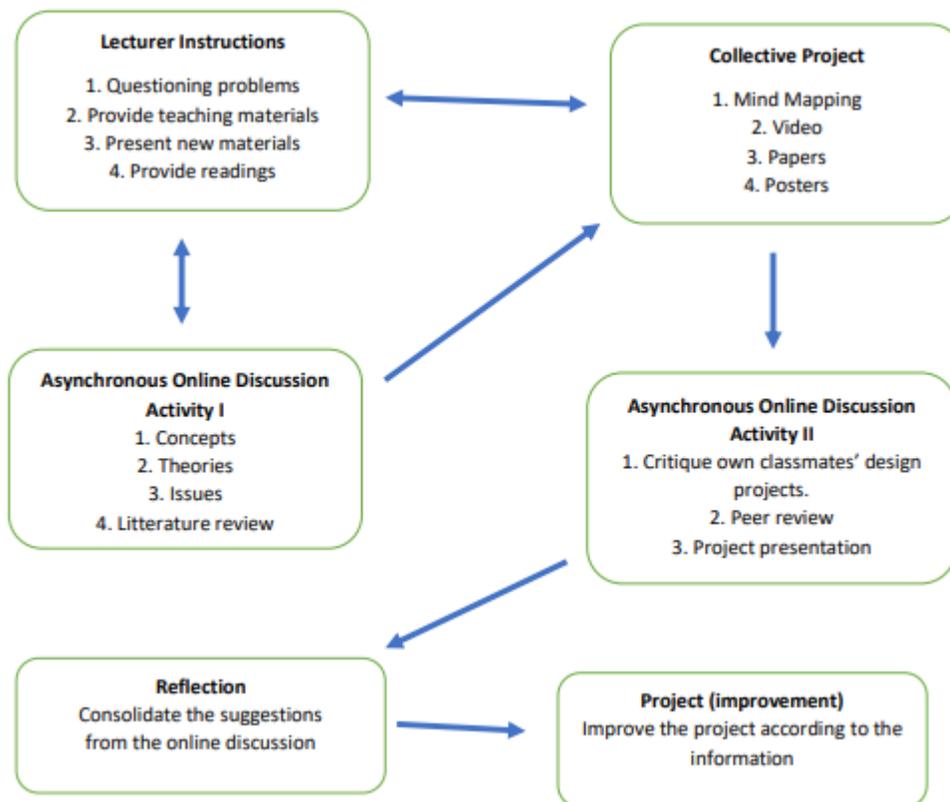


Figure 1. Stages of Implementing Online Discussion

3. Methods

This is a qualitative study research with phenomenological approach. The phenomenon we tried to reveal is the barrier and challenge to learning using text-based online discussion. The research participants in this study were PGSD (Primary School Teacher Education) students in Yogyakarta for 2020/2021 academic year who had

implemented online discussion learning for 6 months starting from March-September 2020 during the Covid-19 pandemic. A number of 60 participants matched the criteria inclusion in terms of data sources (learning), characteristic (online) and topic relevance (implementing text-based online discussions). Students who participated in this study filled out a questionnaire voluntarily and without coercion. The researcher informed that all data submitted by students were only used for the purposes of this research. All participant identities are kept confidential. Everything related to the participants' responses to the questionnaire and interviews were kept confidential and did not affect the future fate of the participants.

4. Data Collection

The data were gathered through open questionnaires via google form and complemented by observations for deeper research information. The research observation uses participatory observation. The data has been successfully collected then analyzed using transcendental phenomenological analysis with stages 1) *Epoche*, 2) Select significant statements, 3) Description of the essence of experience (Moerer-Urdahl & Creswell, 2004; Widyaningsih, 2018). Data verification aims to ensure accuracy of the collected data. Peer reviews were done with regular exchanges between two researchers neither of whom were directly involved in data collection. The second researcher (the second author) regularly checked and commented on the methodological process and structure of writing. The second author's insights were provided on selection of criteria and preparation of the questionnaire, the types of analysis and assisting in the interpretation and conclusions of this study.

5. Results and Discussion

Result provides information about student responses towards the implementation of online discussion challenges and obstacles during COVID-19 pandemic. The students' responses are classified into students' recurring challenges and obstacles, they're actually feeling during online discussions, their expectations of online discussion. The researcher explained every sub-theme here below

5.1 Recurring Obstacles During Online Discussions

The perceived of obstacles in online discussions were successfully gathered from the spread of questionnaire (see table 1.). The main concern of student barriers in online discussion is technical glitches.

This finding is in contrast to the formulation of Khe Foon Hew (2012) which focused on the technical aspects of software, this finding is emphasizes on facilities and infrastructure such as electrical outages, weather, and internet network stability. a numbers 51 participant admitted that they were quite disturbed by technical glitches during the discussion. One of the participants said that:

"Obstacles during online discussions that sometimes the signal does not support, even during the rainy season is often a electrical outage so sometimes the hp / laptop battery runs out"

Total of 45 participants said the technical aspects that often interfere them to participate in online discussions are the instability of the internet network. For example, one of the participants said that when having an online discussion in bad weather conditions such as rain and lightning day, the signal suddenly disappears, consequences the incoming message becoming juxtaposed or be delayed. Furthermore, the poor internet network is driving a domino effect on perceptions about online discussions. One of participant said that he was not excited when the internet network suddenly disappeared, and it's really freaked him out.

The next obstacle in online discussion is low of self-efficacy of students. Self-efficacy can be said a belief in the ability of oneself to succeed in a field (Grenner et al., 2020). Self-perception to mastering a field directs the individual to work better; Someone who has high self-efficacy will consider difficulties in the learning process as a challenge. On the contrary, a person with low self-efficacy will consider difficulties in the learning process as an impassable chasm. In this case, one of participants said:

"I have rarely had discussions during my online lectures because I think there are many friends argue about the topic and if I try to argue, it might be wrong."

Table 1. Student's Obstacles Responses

Items	Response	Verification
Obstacles during online discussions	Participant behavior(n:3)	The main center of attention of barriers in online discussions is technical barriers.
	Lecturer's behavior (n:6)	
	Do not feel the benefits of discussion (n:9)	New obstacles that have escaped previous empirical research include misunderstandings of written language, netiquette, low self-efficacy and financial support
	Technical (network, electricity, weather) (n:51)	
	Do not know to participate (n:8)	
	Difficulty following the discussion flow (n:11)	
	Financial (n:1)	
	Not on time (n:1)	
	Not fun (n:1)	
	The occurrence of written language misunderstandings (n:1)	
	Differences in learning style (n:1)	
	Netiquette (n:1)	
	Low self-efficacy (n:1)	

Self-perception in self efficacy is a very important element for motivation (Schunk, 2012). Even more, empirical research from Rachel L. Bradley et al (2017) found high self-efficacy is a reliable predictor for determining academic success in online learning. This means that the higher person's self-efficacy, greater the academic success in online learning.

The form of language as messenger is also an obstacle in online discussions, especially those based on text. A case from observation, a lecturer wants to avoid material misconceptions that occur repeatedly during the online discussion process. So, she needs emphasis on the misconception information. In written language, if someone wants to put emphasis on some information can be done by italic or bold the text of that information. The problem is, when the software does not provide italic and bold features, then the lecturer use capital letters forcedly. The use of capital letters in written language (only the title) means that the person provides information by shouting / sounding loud enough and in Indonesian culture is interpreted as disrespectful. When discussing with the written language, the text goes through by two processes namely the process of encoding and decoding, in this case the interpretation is an aggressive lecturer action. As a result, students feel uncomfortable following the learning. One participant said that:

"Sometimes there are somethings that I feel uncomfortable about the feedback or suggestions, it's less acceptable because it may be the language is not appropriate."

Typing a word in all capital letters on the internet environment is an aggressive and abusive act, netiquette strongly advises to avoid this behavior (Garber, 2012). Netiquette is a set of moral rules that order activities on the internet to create a healthy internet society. Research by Farshad Nia & Marandi (2014) found that the need for understanding netiquette in online environmental learning in native speakers. This means that the online discussion process requires an understanding of netiquette in all discussion members (instructors, lecturers and students) to create a positive and supportive virtual learning environment.

When a message is posted as contribution to online discussion, the interpretation of the information is depending on the receiver. Messages delivered in convoluted language without any core ideas and clear intentions make communication elusive, consequently receiver misunderstands the information. A case from the observation gives an idea, when a student asks the audience an online discussion by posting the following question:

"There is a child do some motion experiments that produce a pattern of dots, called what the motion is? please explain"

Difficulty to understand the purpose of writing in online discussions makes students limited in contributing. As a result, online discussion activities are paused for a moment to understand the question. Learning is basically a communication process. Lack of body gestures, facial expressions, and vocals that encourage participants to misinterpreting or misinterpreted other participants in text-based discussions (Hew & Cheung, 2012). Understanding and interpreting written messages in text-based online discussions is the key to knowledge building efforts.

The last obstacle is the issue of financial support. While learning requires the internet, not all places can access the internet for free. Consequently, students buy internet qouta packages from mobile operators to support the learning process. Using regular internet to participate in online discussions, communicate and socialize for project work, access and download videos lecturer materials, and do regular video conference has an impact on the reduced chances of accessing the internet, one participant said:

"The obstacle is very wasteful data packages; we are not come from the city with uncertain financial. Whether our parents are having money or not to buy quotas and limited networks outside Java Island"

Socioeconomic status is a major factor influencing academic achievement, but the relationship between family socioeconomic status and student academic achievement may vary in a variety of socio-cultural contexts (Liu et al., 2019). Rodríguez-Hernández et al (2020)found a weak positive relationship to higher education. So that, college students who come from families with low socio-economic status can still have good academic achievement. The procurement of internet qouta does not guarantee improvement of academic achievement, but facilities remain a critical point of how students continue to learn and contribute online discussions.

5.2 Students Actually Feel During Online Discussions

In general, the response is varied because it relates to the participant's point of view about the experience of online discussion (see table 2). Participants' responses were strongly influenced by external stimulus and internal interpretation. There are participants who respond positively there are also negative ones. The feelings gathered in the questionnaire can be used as a step to mitigate the barriers to online discussion. The main focus of what students feel during online discussions is negative opinions.

Table 2. Student Experience Study by Using Online Discussion

Questions	Responses	Verifications
Students Actually Feel During Online Discussions	Challenged	Negative responses from students are caused by various problems
	Happy	
	Excited	
	Dislike	
	Boring	
	Difficulty	
	Frustration	
	Confused	
	Lackluster	
	Overwhelmed	

The cause of students' feelings of dislike, difficulty, frustration, confusion and lack of enthusiasm is the lack of social interaction built between discussion participants and discussion instructors (see table 3). Although online learning is able to create social interactions, it is not as complete as face-to-face learning. When students learn by face-to-face interaction, the use of tonal cues such as inflections and expressions can potentially help the recipient for better understand the message and therefore, it's reduce the risk of misunderstanding. (Hew & Cheung, 2012). Misunderstanding occurred in online discussion due to participants having difficulty in expressing themselves or explaining complex concepts using text-based media

Table 3. Negative Responses Antecedent

Student Experience	Negative Response	Verifications
Dislikes	I am not comfortable; I prefer to face to face course	Lack of social interaction
Difficulty	Difficulty for understanding and undergoing material in lectures because lack of sensations such as in the classroom interact directly both with lecturers and other students	
Frustrating	I am so frustrated that I do not understand the material delivered, it is easier to understand the material when we listen directly	
Confused	Sometimes I feel so confused to understanding the presented material, because maybe it more comfortable to be able by direct face-to-face discussion	
Not Excited	I am less excited Miss, because at home environment make me lazy and I did not meet other friends. so, I'm not feel competition anymore in learning and for discussion is not good at online environment.	
Boring	I am very happy because I can get to know and use various applications in learning, but over time become bored	Less method variation
Overwhelmed	I feel little overwhelmed because the task given is sometimes given more and more with very close deadline	Task Load

While COVID-19 pandemic, learning supposed to face-to-face interaction becomes isolated. The key principle of creating a valuable educational experience is interaction, especially of "free communication" because human are social beings, thinking and learning is a social effort (Garrison, 2018). Face-to-face learning allows student-instructor interactions develop knowledge and build socio-emotional relationships quickly. Research from Paechter & Maier (2010) reported that students prefer face-to-face learning over online learning because of the communication goals that build mutual understanding or interpersonal relationships.

Boredom can be said to be disease in learning. Students infected with boredom are unable to reach their cognitive and metacognitive potential so are at higher risk of low grades, school absence, and dropouts (Daschmann et al., 2014). Research by Perkins & Hill (1985) which became a general theory of boredom concluded that boredom is associated with subjective monotony and student frustration levels. This means, both monotony and level of students' frustration have a relationship of boredom. More precisely, subject's perception about the situation pushes on boredom. Face of monotonous situations and a lack of desire for choice, our attention becomes diminished, our minds wander and boredom increases (Danckert & Eastwood, 2020). Daschmann et al (2014) added that monotony in classroom learning instruction was identified as the closest cause of boredom in the classroom.

When discussing online text-based, students feel monotonous instruction reps, sitting in front of a laptop, doing criticism and peer review. post, and respond to the posts of lecturers and peers. Activities that lack sensory potential and predictable signals produce boredom as a result of automated learning activities (Aart et al., 2010). Research from Daschmann et al (2014) says instructional strategies are not diversified day by day are the cause of boredom from a student's perspective. Thus, Schunk (2012) suggests teachers/instructors stimulate the learning environment so students can discover new information and avoid the boredom of learning, students who feel the material is not challenging can become bored.

Students feel overwhelmed in online discussions because the assignments given in online discussions must be done in a short time. The more complex the task is given, the longer the task is done. Whereas Schellens et al research (2005) concluded when the task of discussion is too complex, the level of knowledge construction is much lower. So, too complicated task given in the discussion does not provide a better understanding. When the conceptual basis of the material is not fully available or using a foreign language makes students feel frustrated. Frustration associated with student boredom (Perkins & Hill, 1985).

5.3 Students' Expectations for Online Discussion Learning

Online discussion is a method often used in many distance lectures. Table 4 shows an overview of students' expectations on online discussions. The students' expectations give us advice to improve the practicality by bringing assumption that there's no perfect method is used in instruction. The main emphasis on suggestions for online discussions is to provide a long term of duty

"The assignment deadline please do not take too a while, because almost all courses have a task, please understand us."

Assignments in discussions are used to know the extent of a student's understanding but assignments cannot be assigned too often. Hew & Cheung (2012) recommends that assignments to students be done at intervals of 2 weeks. An empirical study in Indonesia on assignments by lecturers during the COVID-19 pandemic conducted by Livana (2020) involving 1,129 students found that the main factor causing stress was learning assignments. If this persists stress can interfere with memory retrieval and renewal, and this effect is risky on their learning achievements (Vogel & Schwabe, 2016).

Table 4. Students' Expectations

Items	Responses	Verification
Suggestions for learning online discussions	Need opinions and explanations from lecturers	Although it is already a formal cognitive stage, students need the lecturers role in accompanying the course. Students can't just be 'let go' but there needs to be scrutiny.
	nothing;	
	made more interesting;	
	the maturity of the task;	
	always keep an eye on the course of the discussion;	The main center of advice in online discussions is the assignment that must be given a long time.
	ensure the participant's understanding	
	more active discussion	
	reciprocal interaction between lecturers and students;	
	train critical thinking.	
	communication with easy-to-	
	understand language;	
	media variations;	
	no suggestions	

In text-based online discussions it is difficult to explain problems related to calculations and formulas and it better to explain calculations and formulas using video. Another suggestion that can be considered is to ensure the understanding of students so that it can be followed up whether it is necessary to explain the material back or add material as suggested by participants as:

"After college it is better to hold a quiz to find out if students already understand in the material or not, not only always a task because it will make students discouraged and may not follow the lecture"

Talking about ICT in the world of education means also talking about the challenges of integrating ICT on contributions to achieving educational goals and needs. Therefore, it is necessary to determine how educational objectives can be built and assisted by tools in ICT (Ares et al., 2018). Quiz giving in online discussions can use *game-based student-response systems* (GSRS) as the most commonly used is KAHOOT!, so as to increase motivation, involvement and interest in following the discussion. An empirical study conducted by Alf Inge Wang (2015) found that using *game-based student-response systems* (GSRS) can improve students' engagement, motivation, and learning after using them repeatedly for five months. That is, if GSRS is applied in online discussions using e-pedagogy will

increase their motivation, engagement and learning outcomes. The unique thing to be found in GSRS is its competitive nature that is able to hold students' attention(Wang, 2015).

Distance learning has given students the opportunity to become self-direct and use self-discipline (Self-dicipline) to embrace their own learning (Covelli, 2017). Teachers and students must adapt quickly in a distance learning environment(Carrillo & Flores, 2020). The integration of technology in learning changed the role of teachers who were originally as "wise people on the stage" to "Mentors on the side" as well as the role of students also changed from passive content recipients to be more active as participants and partners in the learning process (Nawaz & Qureshi, 2010). Participants advise on online discussions is the role of lecturers as facilitators who explain the material again. a participant says:

"Yes, I have a suggest, for this discussion we ask the lecturer to monitor the course. Because despite the status of our students, as prospective teachers of science we can have to be valid. Not only opinions, from peers or classmates".

Lecturers or instructors play an important role in online discussions as moderators in order for discussions to run in a structured manner; facilitators provide web-based media and teaching resources, articles and journals; instructors/ knowledge other/ experts guide, advise materials and projects, explain and compile. This role ultimately provides a deeper understanding of the material and encourages higher thinking skills (Lindberg & Brown, 2020). Empirical research related to the role of instructors conducted by Gašević et al (2015) found a significant association between externally facilitated regulation by instructors and the high-level cognitive presence of students in online discussions. This means that lecturers who provide regulation in online discussions can encourage students to achieve a higher cognitive level than un regulatory online discussions. Higher cognitive levels can be achieved by creating socratic dialogue between lecturer-students (Garrison, 2018; Hew & Cheung, 2012; Lindberg & Brown, 2020; Yang et al., 2005).

6. Conclusion

This research discusses the obstacles in conducting text-based online discussions conducted with the principle of e-pedagogy in the perspective of students. We use 60 participants who have experienced text-based online discussions during the COVID-19 pandemic from March to September. The research findings provide additional constraints on online discussion research. Although we have tried, this research focuses only on text-based online discussions, not yet at a more specific level e.g., garrison's Community of Inquiry framework. We provide recommendations for future research to understand obstacles from the instructor's point of view.

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Biography

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