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Perceived Barriers to Online Collaborative Learning by Prospective EFL Teachers

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Abstract

Online Collaborative Learning (OCL) has been increasingly investigated since it promotes students' active learning as well as their social and interpersonal skills. This research aims to unveil the types of online collaborative learning activities undertaken by prospective EFL teachers in an Indonesian university, along with the barriers to such learning environment. This research employed mixed-method research with explanatory sequential design and to collect the data, a 41-item questionnaire developed based on six constructs derived from previous research entailing motivation, commitment, social interaction, technical skills, time and support and technical problems was distributed to 53 respondents and a semi-structured interview was administered to 10 selected interviewees to elicit deeper information on the perceived barriers. Data analysis executed using descriptive statistics and thematic analysis suggests that most of the respondents utilized learning management system and WhatsApp group to carry out collaborative learning tasks involving group projects, group discussion, group presentation, and knowledge sharing. While generally the respondents select neutral responses across all the constructs, there is a constant higher refusal than agreement rates to the barriers in all constructs except for the technical problems. This implies that the barriers of the online collaborative learning depend on mutually interconnected factors.

Keywords: Perception; barriers; online collaborative learning; EFL

Introduction

Collaborative skill has been one of the most fundamental skills necessary to overcome challenges in the 21st century apart from critical thinking, creativity, and communication skills. Meanwhile, the advent of information technology has shifted traditional classroom activities to hybrid or full technology-mediated instructions. This enables students of higher education to have a relatively equal access to information on the internet and to gain opportunities to work together

under online collaborative learning (OCL) environment. Online collaborative learning has grown in popularity (Robinson et al., 2017) and has been reported to provide advantageous impacts for students. The development of critical thinking and problem-solving skills and self-reflection, and co-construction of information and meaning are among the most commonly claimed benefits (Chiong & Jovanovic, 2012). Other research findings demonstrate high levels of collaborative behavior during task completion, characterized by interaction, mutual respect, and interdependence; this enabled the group establish a strong feeling of a "community of practice" and a supportive, goal-oriented learning environment (Cullen et al., 2013) while increasing technical self-confidence and liking through reducing technical anxiety (Magen-Nagar & Shonfeld, 2018), improving academic performance as well as learning satisfaction (Razali et al., 2015). However, despite the pedagogical benefits of collaborative learning, online learners may find collaborative learning activities to be frustrating (Capdeferro & Romero, 2012). This pain-staking experience may be attributed to an imbalance of commitment between teammates, lack of shared goals, disparities between group members' grades, problematic student communication, and gaps in individual contributions during collaborative projects. Thus, the success of online collaborative learning can be associated with three essential elements: learning environment, learning task, and learning interaction (Razali et al., 2015)

The term collaborative learning has been defined in various ways, but all have things in common that it requires active learning in which several students participate to accomplish the same goal and tackle the workload equitably. Simply put, during learning activities, division of responsibility and task occurs, thus encouraging team building and positive group dynamics development. Collaborative learning has its root in Vygotsky's constructivist theory, claiming that learning occurs through social interaction and artifacts. Each learner must find, build, practice, and validate information, and instead of remembering facts and processes, learners create new conceptions of concepts by connecting current information with past information (Ng, 2012). In the literature, collaborative learning is often used interchangeably with cooperative learning despite being distinctive. While collaborative learning approaches emphasize student-to-student contact in the learning process, cooperative learning strategies encourage students to work in small groups, generally under the teacher's supervision. Furthermore, students generally turn in their works individually in collaborative learning, whereas they submit their work to a single unit in cooperative learning.

Students learn together in teams in the online sphere utilizing information communication technologies, particularly the Internet, as mediating tools in online collaborative learning (Ng, 2012). Similar to online learning, OCL can be undertaken by students in two ways: synchronously or asynchronously. Asynchronous learning is characterized by one-way, non-interactive real-time communication in which instructors provide reading materials, playable lecture videos, assigned tasks, and assessments in a manageable time frame. In contrast, synchronous communication necessitates dynamic real-time communication between instructors and students or between students and their peers via live chat, streamed video, and other means (Anderson, 2008). Nowadays, asynchronous learning is typically carried out through a learning management system or chat.

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On the other hand, synchronous ones are undertaken through virtual meetings such as breakout rooms in Zoom or other virtual meeting applications. More specifically, the types of activities in online collaborative learning can involve group projects, group discussion, group presentation, collaborative writing, group reflection, peer review, knowledge sharing, and collaborative data collection (Jieun & Osman, 2021).

Collaborative learning can be characterized by instructor-student shared knowledge. Shared knowledge is a feature of the conventional classroom in many respects, where the teacher is the information provider. Still, it also includes some student input, where students contribute their experiences or expertise. Another characteristic of OCL is shared authority between instructors and students. In this scenario, the instructor shares goal-setting power with the students within a topic, allowing them to approach the completion of an assignment in their own way. The next trait of OCL is teachers as mediators. Teachers assist students in learning how to learn in this area, which is one of the most essential components of collaborative learning. Students in heterogeneous groups depict the last characteristic of OCL. This trait encourages all students to accept and accept the contributions made by all class members, regardless of the subject.

As a relatively new instructional practice, online collaborative learning may pose several challenges in its implementation. Muuro (2014) et al. summarize the following aspects in which students find them challenging when engaging with online collaborative learning entailing poor motivation, lacking individual accountability and negative interdependence. Motivation can be associated with students' willingness and commitment to engaging in a collaborative learning environment. These could be marked with low intrinsic motivation, an unmotivating learning environment, and a lack of unified goals among group members. In terms of individual accountability, accountability represents students' attitude during their involvement in an online collaborative task. This can take the form of less engagement by the students showed by their hesitance in doing the assigned individual task in a group resulting in less contribution or becoming a mere free rider (Roberts & McInnerney, 2007). Furthermore, while online collaborate learning ideally changes the behavior of students and let them work together, it is often found that students simply rely on their teammates whose expertise and experiences are better, thus missing the opportunities for learning.

In the context of EFL teacher education, the role of instructional technology has been inevitable for knowledge construction and a collaborative learning environment. Since teaching is a complicated profession, one method for preservice teachers to cope is learning from peers and working teachers and academic courses (Margaliot et al., 2018). In the digital age, these ways can be facilitated through the use of online collaborative learning, where they can share and exchange ideas, pose problems and think together about the solutions, and formulate explanations of an issue. However, like any other online learning activity, OCL has both advantages and disadvantages. The latter has been more apparent, especially in Indonesia, where the introduction of instructional technology to the classrooms is quite novel. Mapping the disadvantages and barriers perceived by these prospective teachers will provide valuable resources and information from which better instructional design can be made.

While research on the problems and challenges of online learning has hitherto been massively undertaken in the literature, there is a prominent gap in which scanty inquiries specifically address the barriers in online collaborative learning. This study is intended to fill the gap by focusing on the following questions:

1. What are the online collaborative learning activities undertaken by the prospective EFL teachers?
2. What are barriers to online collaborative learning perceived by those prospective teachers?

Method

This research is a descriptive inquiry employing quantitative and qualitative (mixed) methods within the same time frame and equal weight with explanatory sequential design. The quantitative data were garnered through a questionnaire from which data of EFL pre-service teachers on the perceived barriers were analyzed using descriptive statistics. On the other hand, the qualitative data were collected based on the interviews with the informants to elicit information on the sources of the barriers.

In this research, 53 pre-service teachers (17 Males and 38 Females) taking English Language Education Program in a local public university situated in Lombok, West Nusa Tenggara took part as the respondents for the distributed questionnaire on the barriers to online collaborative in the form of a 41-item questionnaire with a five-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree) to gain the qualitative data. The questionnaire items were developed based on research on the barriers to online learning (Muilenburg & Berge, 2005) and sources of frustration in collaborative learning (Capdeferro & Romero, 2012). However, for the interview session, ten students volunteered in data elicitation. A semi-structured interview with six questions was administered to the selected participants. The questions are based on six constructs derived from the previous research, including: motivation, commitment, social interaction, technical skills, time and support, and technical problems. Each of the selected participants was interviewed in 15 minutes, and the interview was recorded using smartphones. Each interviewee is coded from S1 to S10.

The data analysis was performed by displaying students' responses to the questionnaire using descriptive statistics. The data were displayed in a bar chart and percentages. From these data, answer to first research question was obtained. The final data from this research is the interview data. The recorded interview was transcribed and analyzed using thematic analysis (Braun & Clarke, 2006). Themes were drawn from the data after the transcripts of the interviews were compared and contrasted.

Findings and Discussion

The findings of this study begin with the description of online collaborative learning activities undertaken by the preservice teachers. In the following subheadings, the barriers perceived are presented according to their responses to the questionnaire and interview.

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Platforms and Online Collaborative Learning Activities

The illustration below depicts the three most used platforms for the online collaborative environment: Moodle, Google Classroom, and WhatsApp group. The learning management system accounts for the lion's share, with Google classroom at 79.2% and Moodle at 35.8 %. The use of a learning management system has been mandatory in higher education. The data below also demonstrate that WhatsApp (45.3%) group is undeniably the major platform for online collaborative learning partly due to its practical use and low internet usage. It is also quite common to use multiple platforms at once by integrating Moodle and WhatsApp or other possible integrations.

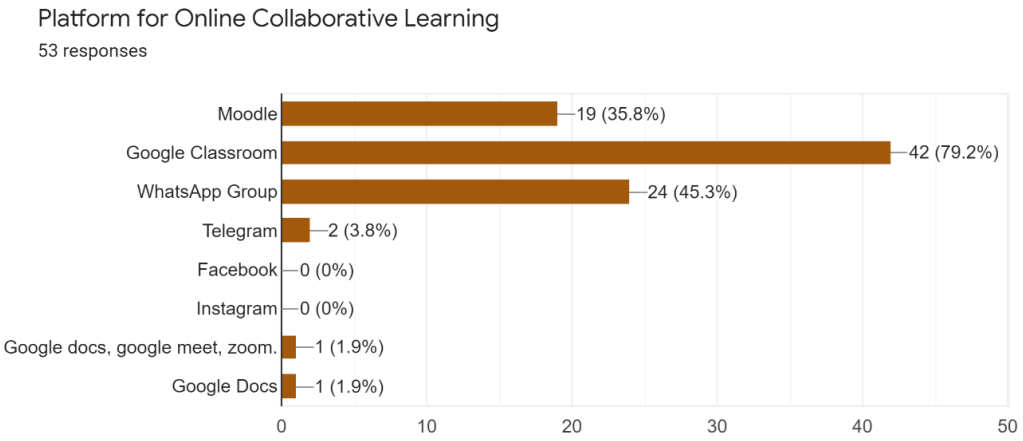


Figure1: Platform for Online Collaborative Learning

Regarding the collaborative activities online, the figure below demonstrates that group discussion accounting for 75% of respondents has been the major collaborative activity undertaken by the students, followed by group projects (39.6 %), group presentation (32.1 %), and knowledge sharing (32.1 %). On the other hand, a relatively steady rate of students chose assessment-related activities, including practice exercises and group exams. In contrast, the most minor selected activities entail collaborative data collection, peer review, and group reflection.

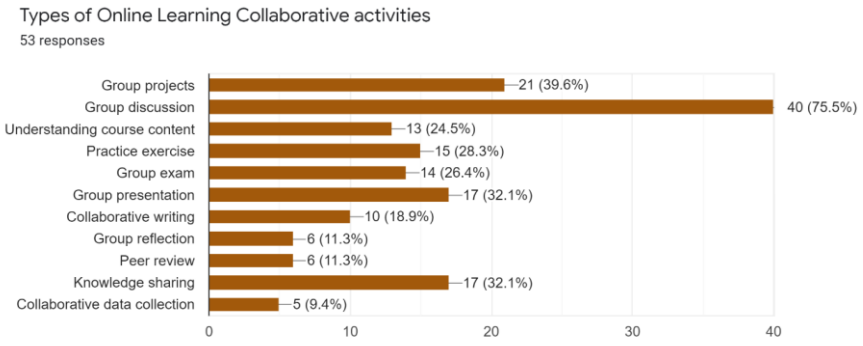
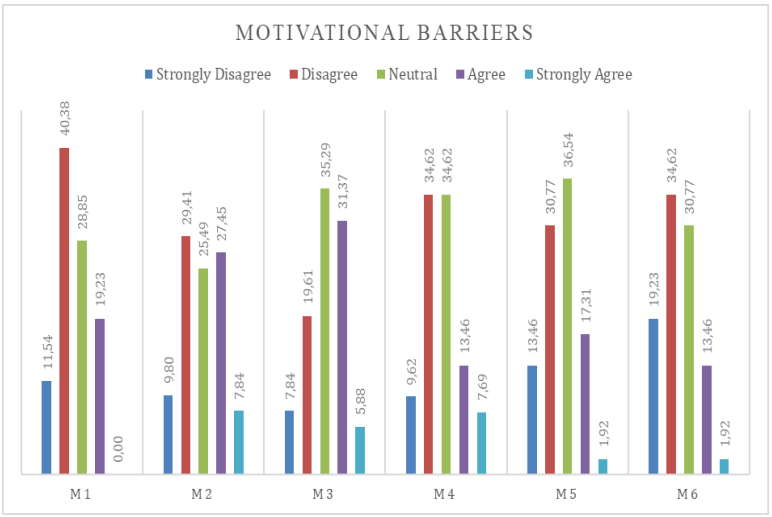


Figure2: Online Collaborative Learning Activities

Motivational Barriers

Most of the data in the motivations are predominantly marked by both disagree and neutral options. This is demonstrated by the percentage of students who refused the idea of procrastinating assignment (M1) indicated by 11.54 % who chose to strongly disagree about procrastination, 40.35 % of the total respondents choosing disagree followed by those who choose neutral options at 28.85% and only 19.23 % choose to agree with such statement. Procrastination negatively correlates with learning performance where high procrastinators are likely to be unsuccessful in learning than low procrastinators (Michinov et al., 2011). Meanwhile, there is a relatively balanced response regarding being motivated to work in online groups (M2). The strongly disagreeing in tandem with disagreeing students make up for 39.21 %, while the opposite responses account for a total of 35.29%. This clearly demonstrates that about half of the students feel unmotivated for online collaborative tasks while their half counterparts feel the opposite. Furthermore, M3 (choosing less demanding aspects of assignment) illustrates more students who prefer this statement, avoiding more challenging tasks instead of being challenged to do such kinds of task (agree and strongly both account for 37.25 % compared to 7.84 % and 19.61 % who opted strongly disagree and disagree respectively. In contrast, M4 shows the opposite trend in which more students' responses demonstrate more negative views on stimulating an online collaborative learning environment (M5). This is shown by 9.62 %, and 34.62% respondents choosing strongly disagree and disagree accordingly, while those viewing OCL as not stimulating are marked with 17.31% of agreeing students and 1.92% opting for strongly agree. The last statement for motivational construct deals with shyness or confidence problems (M6). Most of the respondents (19.23 plus 34.62) oppose this statement and indicate that they are not shy to learn in an online collaborative learning environment.



M1 I procrastinate doing my group works
M2 I am not personally motivated to work in online groups
M3 I choose easier/less demanding aspects of assignment
M4 The online collaborative learning environment is not stimulating
M5 I share irrelevant posts during online discussion

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M6 I feel shy or lack of confidence for online collaborative learning

Figure3: Data of Motivational Barriers

The students reported several explanations regarding motivation as to why they can be either motivated or demotivated to undertake online collaborative tasks. One student (S1) stated that it highly depends on their group members or collaborative friends. In this sense, collaboration is facilitated when all the group members are motivated too. Therefore, motivation is contagious. This is consistent with previous research by Tanaka claiming that demotivated peers have impact on students' motivation (Tanaka, 2017).). Additionally, other students claim that motivation is interconnected with other factors, including internet connection. Doing tasks online does not seem stimulating as face-to-face group assignment is preferred. This result confirms what Roberts (Roberts & McInnerney, 2007) assumed as an interconnection between factors affecting online collaborative learning. For instance, one of the interviewees (S2) states that problems in technology influence their motivation.

(S1): "Depends on collaboration friends. When it comes to motivation, if our collaborators are people who tend to be active in the online world, of course, we are also motivated, but usually the barriers like the first one related to online networking and communication are a bit more difficult. So, it depends on friends who are motivated to do online assignments."

(S2): "Not motivated because it is very difficult to discuss, difficult to exchange ideas. If the signal is bad, we will not be able to get a satisfactory answer, and the discussion will still sound halting because of the bad signal. Besides that, what makes me unmotivated is doing assignments online."

(S5): "I don't feel motivated because every time there is a collaboration task, other collaboration friends will not help me with the task."

(S10): "I'm not motivated at all because I can't discuss freely because I use online media (chat). So, some student friends become lazier to think."

Commitment Barriers

Overall, for all statements for barriers to commitment to online collaborative learning, most responses demonstrate disagreement compared to the opposite options. Nonetheless, a big number of neutral responses ranging from 35.20% up to 42.31% appear in every given statement response. For example, member withdrawal (C1) shows a high percentage of neutral response (42.31%), leaving an impression that sometimes group members exit their group, while other times it does not take place despite more disagreement for this statement. In the case of C2 (shared goals), more responses refute the idea of not having shared goals in a collaborative activity (C2) which is positive. A high rate of 41.18 % demonstrates a good trend among students to have shared goals. Most of the responses are neutral for individual contribution in a collaborative task (C3), although more responses (31.37 % disagree and 1.96% strongly disagree) indicate that the

students tend to defend their group mates. However, the number of responses agreeing with C3 is nearly equal to those who disagreed. The next statement on hesitance to work in a group and meet the deadline (C4) shows a quite similar trend to C1 and C3 in which a quite high proportion of the students choosing neutral options while showing more weight on the disagreement. The last statement on the commitment deals with being a free rider in a group (C5), indicating less contribution to group task accomplishment. Most of the respondents reject this statement and demonstrate that they are not free-riders. However, a quite moderate rate depicts many students playing as a free-rider and being opportunistic in a group. All these findings regarding commitment barriers are bound with the term sense of community which affects students' commitment to do collaborative tasks. Sense of community increases a sense of commitment toward group goals (Chatterjee & Correia, 2020). However, the result on commitment barriers seems to be little, opposing the studies that online learners become frustrated with collaborative learning due to a commitment imbalance on the task and a lack of common learning goals among students (Capdeferro & Romero, 2012). Besides, these findings ensure students' individual accountability as the responses show more weight on the denials of the barriers than the agreement about them. To sum up, these data indicate that the students are committed to online collaborative tasks that are helpful.

C1 My group member(s) withdraws/exits from the groups
C2 We do not have shared goals in our group
C3 My friend(s) does not contribute much in collaborative tasks
C4 I was too hesitant to work collaboratively and meet the deadline
C5 I'm sometimes just a free rider in my work group

Figure 4: Data of Commitment Barriers

Based on the interview, most of the students believe that their commitment is a must since doing collaborative tasks online is mandatory for all the students. In contrast, others believe that they are committed due to good grades, as stated by S5. However, it is worthy of a close look at how the students take the group tasks partly because of easy access to information on the online sphere, which can help

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do assignments faster, as claimed by S9. Others think that they are not fancy online learning as it is not their personal preference (S10).

(S3):"I am fully committed to doing online assignments because it is a must for every student. Therefore, I must be responsible for the tasks that have been given."

(S5): "I am committed to working on online collaboration assignments just because I want to get good grades from the lecturers."

(S6): "Talking about commitment, of course, my commitment is high, especially related to assignments because in my opinion assignments are a benchmark for students' ability to understand something."
(S7): "Due to the current pandemic situation. strong or not strong commitment, we have to do it because of this pandemic situation."

(S9): "My commitment to working on online collaboration tasks is not very strong because sometimes I am very excited about doing assignments and even have made a schedule so that the task is completed on time. But some things make my spirit lack, and as a result, the task is not completed. Sometimes I also underestimate online assignments because I can directly copy-paste on the internet."

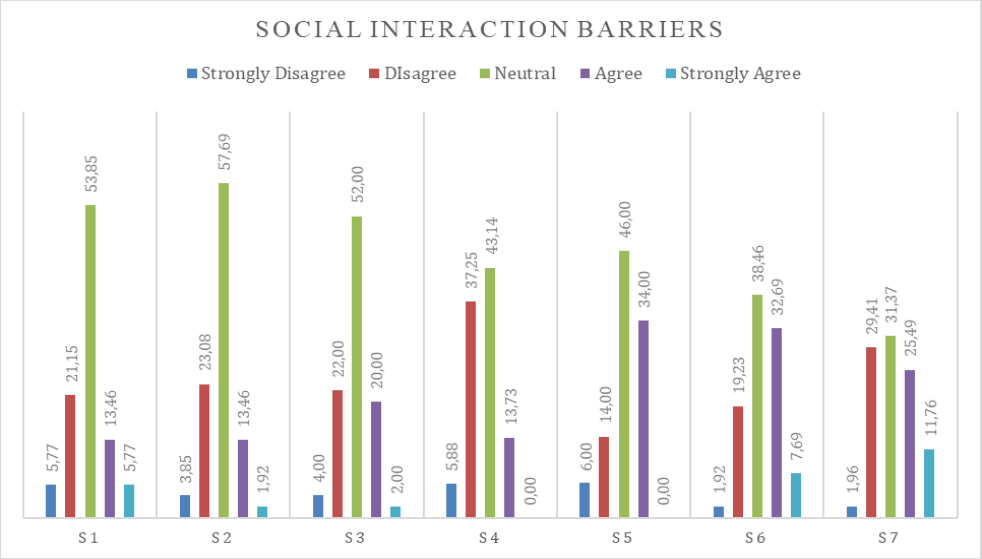
(S10): "I'm not very enthusiastic about doing online assignments because I don't really like online learning or online discussions."

Social Interaction Barriers

In general, in terms of social interaction, the response rate is dominated by neutral responses across all the statements within this aspect. These probably imply uncertainty or the chance of either agreeing or disagree, reflecting occasional established interaction for students. At times, they also come across occasions when they feel less interaction in group tasks. In addition to these, tendencies to disagree with the statements occur in all statements except for S5 and S6.

More specifically, lacking interaction (S1), disagreement/conflicts (S2), and fear of being isolated (S3) are similarly marked with students' disagreement with relatively moderate proportions at 5.77% strongly disagree, and 21.15% disagree for S1, 3.85% strongly disagree, and 23.08% disagree for S2. In comparison, 4.00% strongly disagree, and 22.00% disagree for S3. Very few respondents reported that they encountered these three barriers. A similar trend also occurs in not having a sense of community, poor group management, and little peer feedback indicated by those who disagree outrate those who agree. In contrast, the students reported an opposite trend regarding students' abilities and domination in group tasks (S5 and S6). The data indicate that more students agree to these statements (34.00% agree in S5, 32.69% agree, and 7.69% strongly agree in S6). This implies that when undertaking collaborative tasks, particularly in small groups, the students tend not to have equal opportunity to show their abilities and take their roles as only a few students with more expertise dominate the collaborative scenarios. This, in turn, brings about negative interdependence (Muuro et al., 2014) in which fewer contributing students rely on the dominant

students, thus, the learning environment does not reflect individual learning performance.



S1 I encounter lack of interaction among my fellow group members
S2 I find disagreement or conflicts between group members
S3 I'm afraid of feeling isolated
S4 I do not have sense of community in my group
S5 Students' abilities in my group are unequal
S6 Single student dominates the group scenario
S7 We have little feedback on each other's work

Figure 4: Social Interaction Barriers

The interview data show the sources of these barriers. For example, S2 believes that interaction occurs intensively between group members. However, when it comes to doing an assignment, more works are done by those who possess good internet access. Students like S8 express their concern about having miscommunication due to lacking internet and communication infrastructure.

> *(S1): "So far, when I make collaborative friends and learn collaboratively online, my friends are very active people. So, whenever there is an online collaborative task, we always carry out intensive communication."*

> *(S2): "First, we hope that our friends have a lot of quotas or existing media. We hope they will carry out the task immediately, even though it is an online discussion element. However, all member parties will be involved. It means being involved in doing assignments, but there are already online assignments if you look at the facts on the ground. Who has more quota and the signal is doing their job."*

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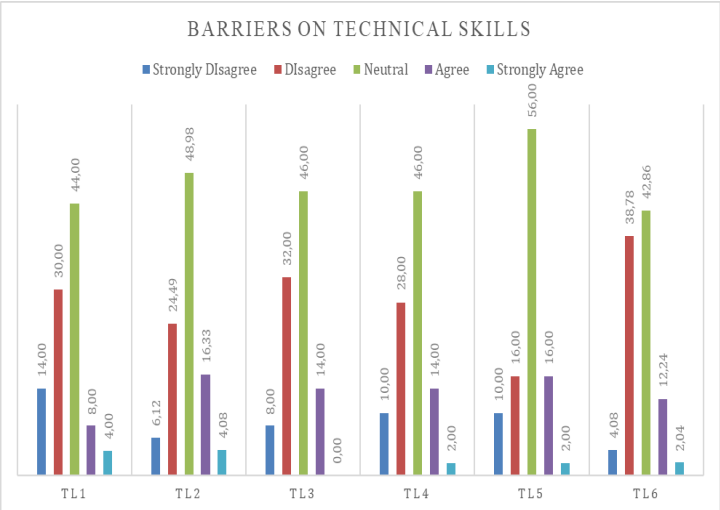
(S8): "Very common Barriers are miscommunication from collaboration members, some are difficult to contact, some lack internet quota, some lack signal, and other reasons. The next obstacle is the lack of coordination of each collaboration member due to lack of communication, as I said above."

Technical Skills

Overall, the responses demonstrate similar results to the social interaction barriers where most respondents perceived barriers to technical skills as neutral ranging between 40-60%. This result seems to highlight how technological skills can sometimes either be problematic while not for other occasions. Therefore, barriers to technical skills are relatively occasional. On some cases, they can tackle problems related to technological skills, but the difficulties are quite apparent, particularly when linked to technical skills such as solving connection and hardware problems. This might be attributed to the technological complexity of the given tasks. Furthermore, comparing the respondents' refusal and confirmation, the data consistently demonstrate that across all the statements the proportions of students who choose strongly disagree and disagree outrate those who agree and strongly agree, implying that to a certain extent, the students find themselves as capable in using technological skills and only few find difficulties or hurdles when operating technology for online collaborative learning environment. These findings are consistent with previous findings that current students in higher education tend to be ready to use online learning technology (Rahman, 2020).



TL1 I'm lack of typing skills for online collaboration
TL2 I fear new technologies for online learning
TL3 I have little skills in using online learning apps
TL4 I'm unfamiliar with online technical tools
TL5 I'm afraid of different learning methods online
TL6 I don't have skills to use the delivery system

Figure 5: Barriers on Technical Skills

The interview shows a similar but varying degree of responses from the subject, as illustrated below. At the beginning, due to new technology, the students seem to find it a bit awkward, yet as the course progresses, they develop awareness and skills in using the technology. The technological abilities are also linked to the instructor's awareness of adjusting the tools used for online learning. The selection of online learning platforms is set to the least difficult.

> *(S1): "So far, regarding technology, there are no obstacles because lecturers usually also choose technology that is not too difficult to use as I said earlier that I am a vocational graduate and for technology, God willing, I can master it."*

> *(S3): "In using technology when learning online, I still find it difficult technically and non-technically."*

> *(S4): "Of course, it feels very difficult at the beginning of its use, but everything is normal as we use it often."*

Time and Support

Generally, the data demonstrate that the students experienced fewer obstacles in terms of time and support. This is proved by more respondents choosing either disagree or strongly disagree, although neutral choices are quite obvious in some cases, especially in TS9 and TS11. There are three statements agreed by a quite big number of respondents: TS 3 (24.53 % agree) & TS4 (34.62% agree). Therefore, the students had high expectations to contact the instructors and receive feedback as soon as possible and encounter distractions at home when studying online. Although time and support has been found to have a modest association with the effectiveness of online learning (Muilenburg & Berge, 2005), in the case of OCL, support can be provided by fellow group members in a collaborative task. Emotional support from intra-group work has been proved to be a pivotal pillar in online collaborative learning (Hernández-Sellés et al., 2019).

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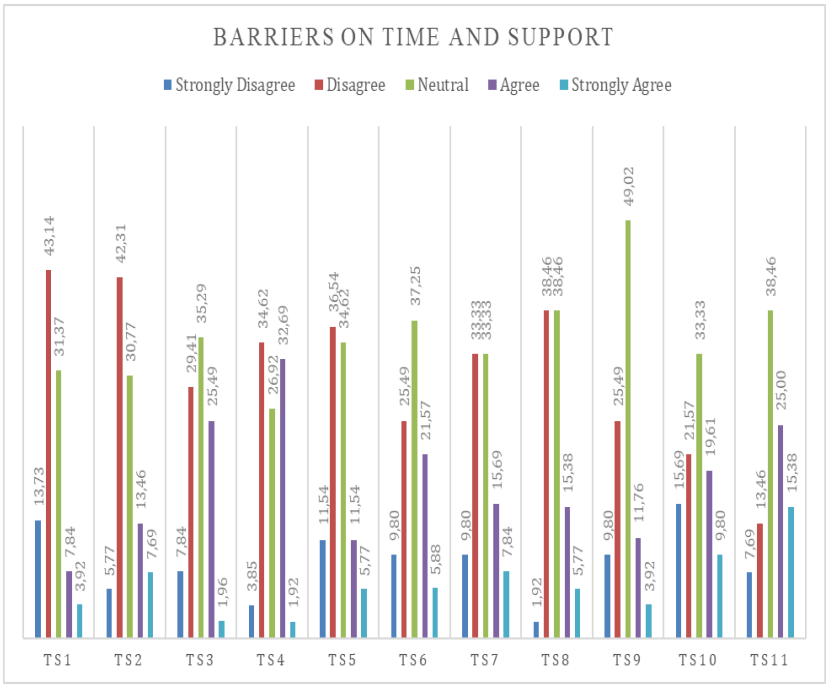


TS1	The instructors do not know how to teach online
TS2	The online collaborative tasks do not have clear instructions/explanations
TS3	I find it difficult to contact the instructors
TS4	It is difficult to get timely feedback from the instructors
TS5	The quality of materials delivered online is low
TS6	Training to use the delivery system is insufficient
TS7	The class size is not ideal for online learning
TS8	Course materials are not delivered on time
TS9	The time to do online collaborative work is insufficient
TS10	I get little support from family, friends and institution
TS11	I find significant interruptions when studying from home

Figure 6: Barriers on Time and Support

Based on the interview data, almost all respondents agree that the time and support are adequate. The role of the instructors is described as motivating and supportive. Interaction between students and other students is influenced by teacher-strudent intreaction (Hernández-Sellés et al., 2019), particularly in the form of support. The instructor's support is also fundamental as one method to improve teacher presence in the online classroom is to create an environment where students feel supported and confident (Anderson, 2008). Only a few assume that the lecturers only send materials without follow-up activities and monitoring.

> *(S1):" So far, the support from the lecturers or instructors have been very good in terms of communication or guidance from him-he is very good because I have done collaborative learning. So, the instructors and lecturers always monitor what we are doing, including what is the name of the assistant now, yes, we always learn online, so the lecturers always support what we are going to do."*

(S3): "I feel that time or other support I feel is still a little lacking because the lecturer only gives or sends material without providing a detailed explanation of the material."

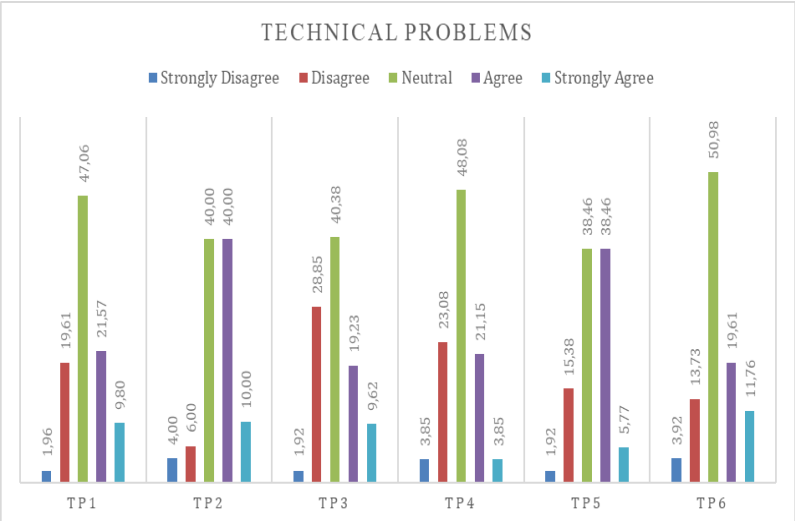
(S4): "During lectures, thank God, almost all lecturers gave waivers for both UTS and UAS assignments given the inadequate online learning system and network. Some lecturers also motivate to keep learning enthusiasm during the pandemic."

(S6): "Alhamdulillah, it can be said that it is enough, but every lecturer gives and spends his time to his students, maybe there are some who are busy so they can't interact with students, but we can understand it."

(S7) Certainly supportive, but not all lecturers do that.

Technical Problems

The following chart illustrates technological problems related to infrastructure and devices. Overall, most of the respondents indicate neutral responses. However, when the refusal and acceptance to the statements are compared, it is quite apparent that the respondents tend to admit that the technical problems are obvious in most of the statements. This can be seen in the available internet access (TP1) at 21.57 % of agreement and strongly agree responses at 9.80% and the costs (TP2) in which the students responding agree (40%) in tandem with strongly agree choice (10.00) even surpass the neutral rates. This also occurs for almost all other statements except for TP4 to which the respondents seem to reject the idea of inconsistent platforms or software used. These results are relatively in line with previous research in Jordan where infrastructure is the most prominent problems of online learning (Aljaraideh & Al Bataineh, 2019) and also confirms that technological problems along with a perceived lack of community, time restrictions, and difficulties understanding the online course objectives were all mentioned as hurdles in the previous research (Song et al., 2004).



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TP1	I do not have adequate internet access
TP2	Online collaborative learning costs too much
TP3	The technology needed is unavailable
TP4	The course is lack of consistent platforms or software
TP5	Incompatible devices create technical problems
TP6	I do not get technical assistance

Figure 7: Barriers on Technical Problems

The interview results also support the data above. The respondents also emphasized network problems and errors in devices used.

(S4): "When submitting assignments, I often encounter problems due to data packets or network problems."

(S5): "Actually, no. It's just the network in the village that makes it difficult for me."

(S8): "Very often find difficulties in the technology system when learning online, ranging from slowness to errors on cellphones and laptops, then system errors in applications used for learning."

(S10): "In this case, I do not feel that I have a problem using technology during the online learning process. However, only the internet network is currently quite expensive."

Conclusion

The results of this study suggest that most collaborative learning is facilitated through a learning management system and WhatsApp groups, while the impeding factors to online collaborative learning are interrelated and often correlates with each other. When it comes to online collaborative learning, the challenges are also twofold: barriers in terms of online learning and collaboration. These barriers are reported mostly as neutrals implying their occasional nature. This research also reported that the barriers are generally minor except for several areas, including personal motivation, preference to pick an easier assignment, imbalanced roles of students in groups, limited peer feedback, and support and technological equipment problems. It is then suggested to consider multiple interrelated factors when asking students to work collaboratively online, optimize the role of instructors to support the online collaborative learning environment, and encourage both the skills to collaborate in learning and to collaborate to learn.

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