Levels of Engagement and Social Skill Among Teacher Trainees During Online Synchronous Cooperative Learning Session Via Google Meet

Nur Farhana Mustadhidin[1], Noor Dayana Abd Halim[2], Mahani Mokhtar[2], Nurul Nadwa Zulkifli[3]

[1]Department of Polytechnic Education and Community Colleges, Ministry of Higher Education, [2]School of Education, Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia, Skudai, [3]Faculty of Social Sciences and Humanities, Universiti Putra Malaysia Bintulu Sarawak Campus, Sarawak Malaysia
Corresponding Author's Email: noordayana@utm.my

Abstract
The aim of the study was to design online synchronous cooperative learning via Google Meet to examine the level of engagement and social skill among teacher trainees at an Institute of Teacher Education (IPG) in the Southern Region of Peninsular Malaysia. A total of twenty (20) respondents were selected from a class of first year teacher trainees who had accessed to the internet and own personal gadgets. The research applied One-Group Post-Test and data were gathered through questionnaires and further analysed by using SPSS (Statistical Package for Social Science) software. Descriptive data analysis was used to obtain the values of frequency, percentage and mean. The findings of the study showed an overall mean value of 2.56 for the level of engagement and an overall mean value of 2.62 for the level of social skill respectively during online synchronous cooperative learning via Google Meet among teacher trainees. Therefore, the data indicated that the levels of engagement and social skill among teacher trainees during the online synchronous cooperative learning environment were high. The finding shows that the design of online synchronous cooperative learning via Google Meet in the teaching and learning of an education foundation subject is effective in increasing the levels of engagement and social skill among teacher trainees.
Keywords: Cooperative Learning, Engagement, Google Meet, Online Synchronous, Social Skill

Introduction
Online teaching and learning (T&L) mode can be divided into two categories which are synchronous or asynchronous (Azlan et al., 2020). Synchronous can be referred to as the form of teaching and learning that happens at the same time through an electronic mode (Perveen,

2016). Since the government declared Movement Control Order (MCO), synchronous mode of online T&L was the preferred choice by lecturers at Institute of Teacher Education (IPG) in order to fulfil Programme Education Objectives (PEO) of each subject. In addition, Google Meet was the most preferred online platform used as compared to other available platforms. However, it is crucial to have to measure the effectiveness of the synchronous learning approach as it relies heavily on the quality of the internet connection and the ability of the instructor to foster active engagement among learner (Azlan et al., 2020).

One of the strategies that can be applied during online learning is cooperative learning which emphasizes on student-centred learning as it promotes the implementation of group activities and collaboration among students (Jacobs, 2015). Moreover, cooperative learning is a teaching strategy which is applied to teach small teams in which a teacher uses a variety of learning activities and every member of the team is responsible for each other's learning. The teamwork can improve students' understanding and to create an atmosphere of achievement (Panlumlers & Wannapiroon, 2015). This type of learning method has allowed students to discuss and clarify issues better with their instructor as well as with their colleagues and this has given them opportunity to improve their participation in online classes (Papadima-Sophocleous & Loizides, 2016). Plus, cooperative learning is also perceived as very encouraging in terms of increasing the level of engagement and social skills among students (Johnson et al., 1991).

Research Background
As they make the transition from conventional classroom environment to an online learning environment, teacher trainees faced with a number of challenges in order to keep their performances up (Selvanathan et al., 2020). First, teacher trainees found it challenging to focus while learning in an online environment not only because of technical problems such as poor Internet connectivity, but nontechnical problems such as lack of engagement (Che Ahmad et al., 2020). Second, the drawbacks of online learning among teacher trainees include lack of motivation, feeling bored, too much information and lack of digital skills as well as lack of engagement in self-directed learning (Rafique et al., 2021). In addition, there are also some obstacles such as lack of physical touch and lack of social interaction which as a result online learning is not as effective as traditional classroom learning (Mathew & Chung, 2021). Thus, this notion forms the basis for the research which is to conduct a study on how to improve the quality of online teaching and learning (T&L) among teacher trainees in Institute of Teacher Education (IPG).

In order to ensure quality online teaching and learning sessions, suitable teaching and learning strategies need to be employed so that students' skills and competencies which are required in professional practice can be developed (Salas-Pilco et al., 2022, Zulkifli et al., 2020). Teaching and learning strategies are changing due to the changes in teachers' roles in online learning because students find the normal lecture method to be boring. Therefore, teachers need to come out with more creative ways to attract engagement and receptivity among students (Mananay et al., 2022). Hence, suitable teaching and learning strategy needs to be introduced in online learning because it is found that there are several disadvantages to the online medium such as paucity of enthusiasm, lower levels of interaction and lack of interest (Yu,2022).

Basically, the need for a new learning activity to be introduced is due to the fact that educational institutions must find alternatives in order to make sure that classes and other learner activities will not be postponed or cancelled anymore during the COVID-19 pandemic

era (Choi et al., 2021). Thus, the researcher is interested in the study towards the design of online synchronous cooperative learning activities within the higher education context, specifically the institute of teacher education. This could be the alternative that will change the face of online learning environment as according to Choi et al., (2021), there is a paradigm shift within the higher education in terms of the overall learning practices that is from offline to fully online classes. Besides, it is found that the online teaching and learning in Malaysian Higher Learning Institutions needs to be improved in terms of the instructional delivery and also the quality of the interaction among students (Selvanathan et al., 2020).

Furthermore, the main problem in online learning environment in a COVID-19 era lies in the seemingly low levels of engagement and it requires some efforts to overcome this in order to deliver quality learning experiences (Andrew et al., 2021). Plus, these challenges can trigger the students to feel that they are missing something and this has resulted in the below par learning experience (Rafique et al., 2021). Thus, teacher trainees' engagement level is an important factor in academic performance especially in online learning environment. According to Sugden et al (2021), online student engagement is best described as the active involvement in the learning process which can be seen through participation, collaboration and interaction. The need to explore the cooperative learning method which is one of the online collaborative learning tools is supported by Che Ahmad et al (2020) that these learning tools can improve lecture delivery and enhance student engagement.

Then, the decision to measure the level of engagement and social skill among teacher trainees is due to the fact that there are still a number of graduates that is lacking in terms of soft skills (Hassan and Maharoff, 2014). This is supported by the National Education Philosophy (FPK) of Malaysia which clearly states that the development of human capital should be balanced by taking into account the physical, emotional, spiritual and intellectual aspects. Thus, what will be measured in the research are the level of engagement and social skill among teacher trainees during online synchronous cooperative learning. The intention is to identify the learning activities that can be implemented so that the level of engagement and social skill can be improved. For instance, cooperative learning encourages deep interaction among students using skills like asking thoroughly and disagree courteously (Jacobs, 2015).

Conceptual Framework

Figure 1 illustrates the conceptual framework of this study
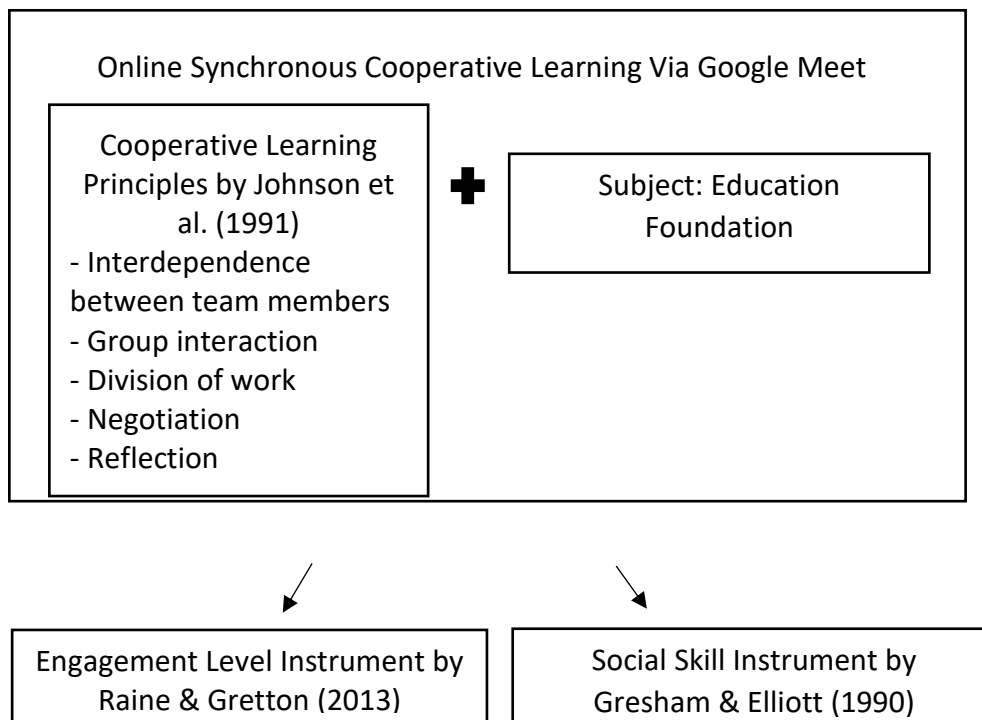
Fig. 1 This is the first figure as EPS (encapsulated postscript) format (Yacob et al. 2011) According to Figure 1 above, there are several elements combined including independent variables to design the teaching and learning and dependent variables which are the level of engagement and the level of social skill to be measured. First, according to Johnson et al. (1991), cooperative learning activities can be described as the learning activities that are associated with the following five principles:

i.   Interdependence between team members (members' contribution to team's success)
ii.   Group interaction (members' participation in helping others)
iii.   Division of work (each member is responsible for specific tasks)
iv.   Negotiation (development of social skills)
v.   Reflection (feedback on team's experience)

Second, this research is conducted among teacher trainees who are undertaking the education foundation subject in one of the Institute of Teacher Education (IPG) in the Southern Region of Peninsular Malaysia. Third, the independent variable for this research is the online synchronous cooperative learning while the dependent variables for this research are the teacher trainees' engagement and the teacher trainees' social skill. Hence, the findings as a result of these two would provide an answer to the research questions of what the level of engagement and social skill during online synchronous cooperative learning via Google Meet among teacher trainees is. The study involves the implementation of a teaching strategy whereby the teacher trainers use various learning activities to teach small teams of teacher trainees and every member of the team has a responsibility of helping each other to understand and complete the learning activities (Panlumlers & Wannapiroon, 2015).

Purpose of Study

The purpose of this study was to design online learning environment using an active learning approach which is the cooperative learning during synchronous learning session. In addition, the study also examined the levels of engagement and social skill during online synchronous cooperative learning via Google Meet among teacher trainees. Therefore, objectives of the study were

i. To design online synchronous cooperative learning session via Google Meet when learning an educational foundation subject.
ii. To study the level of engagement among teacher trainees during online synchronous cooperative learning session via Google Meet.
iii. To study the level of social skill among teacher trainees during online synchronous cooperative learning session via Google Meet.

Methodology

Research Design

The study adopted quantitative research approach and a design known as One-Group Post-Test Only which was introduced by Boring (1954) was used. The design was suitable since it enabled a single group being studied only once, with a presumption that the treatment will have a positive effect (Boring, 1954). Hence, no control group was employed in this study. Since the study was conducted to determine the levels of engagement and social skill during online synchronous cooperative learning sessions via Google Meet among teacher trainees, samples were selected using convenience sampling method. Twenty samples were selected from one class of first-year teacher trainees who could access internet using their own gadgets. They were chosen based on their familiarity of using the Google Meet, a video-conferencing platform in an online synchronous learning. They were given a lesson through an online synchronous cooperative learning session via Google Meet. The procedure for the research is shown in the following table.

Table 1
Research Procedure

Phases	Activities
Phase 1	Design Learning Environment and Developing Instruments: 1) Online Synchronous Cooperative Learning Environment 2) Engagement Level in Online Synchronous Rubric 3) Social Skills level in Online Synchronous Rubric
Phase 2	Pilot Study
Phase 3	Online Synchronous Cooperative Learning: Implementation of online synchronous cooperative learning activities using the five principles of cooperative learning
Phase 4	Post-test (Distributed Engagement & Social Skill Rubrics)
Phase 5	Data Analysis

Instruments

Engagement Level in Online Synchronous Cooperative Learning Rubric

The engagement rubric was filled by the teacher trainees after the treatment process. The Engagement Level in Online Synchronous Cooperative Learning rubric was adapted from

the instrument of student engagement designed by Raine & Gretton (2013) that is based on the AUSSE (Australian Survey of Student Engagement) (Raine & Gretton,2013). The rubric is in the form of questionnaire which has factored in certain scales. Each question uses a 3-point scale (1 = Never, 2 = Sometimes and 3 = Often) to portray the teacher trainees' typical behaviour. Reliability test for the rubric was conducted before the real data collection to find out Cronbach's Alpha value. The result shows that the rubric has a high level of reliability with the value of 0.793.

Social Skill in Online Synchronous Coorperative Learning Rubric
The social skill rubric was filled by the teacher trainees after the treatment process. The rubric developed based on the Social Skills Rating System (SSRS) designed by (Gresham & Elliott, 1990). The rubric is in the form of questionnaire which has factored in certain scales. Each question uses a 3-point scale (1 = Never, 2 = Sometimes and 3 = Often) to portray the teacher trainees' typical behaviour. The alpha value for the social skill rubric was 0.768.

Online Synchronous Cooperative Learning Environment
One of the objectives of this research was to design an online synchronous cooperative learning that could be conducted in Institute of Teacher Education (IPG) to teach an Education Foundation subject virtually using Google Meet. Thus, the learning activities were designed based on the five principles of cooperative learning developed by (Johnson et al., 1995). The five principles are as follows; interdependence between team members, group interactions, division of work, negotiation and reflection. The designed activities are shown in the table below.

Table 2
Online Synchronous Cooperative Learning Environment

Learning Parts	Cooperative Learning Principles	Activities via Google Meet
Part 1: Introduction to Lesson	Interdependence between team member	1) Teacher trainer gives explanations on the purpose of the learning activity.
	Group interaction	2) Teacher trainer organizes the teacher trainees into small groups with mixed ability and suggests to them how to work in group.
	Division of work	3) Teacher trainees undertake the activities according to the instructions.
Part 2: Undertaking of Activities	Group interaction	1) Group members present problems to each other, group members understand the problems together and teacher trainer suggests guidelines to the group.

	Negotiation	2) Group members participate in discussion to define the problems; group members assign assumptions together and teacher trainer monitors group members' behaviours while giving advice as well as suggestion.
	Reflection	3) Group members summarize methods of problem solving, group members conclude the learning processes and group members present the group work report to teacher trainer.
Part 3: Conclusion of Lesson	Group interaction	1) Teacher trainees give their reflection with regards to the lesson by sharing ideas with the teacher trainers on how to meet the learning goals.
	Reflection	2) Teacher trainees evaluate the group work.

The activities in this online synchronous cooperative learning environment follow a set of phases from the beginning of the implementation until the conclusion. In each phase, the cooperative learning principles influenced how the activities were conducted by the teacher trainer and the teacher trainees. Below are examples of the activities that were conducted during the lesson.

Fig. 2 Introduction to Lesson in Google Meet
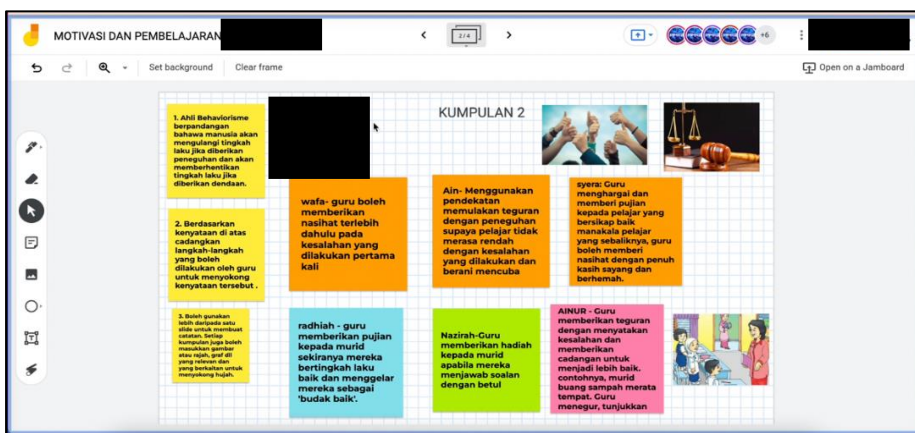
Fig. 3 Undertaking of Activities

Fig. 4 Conclusion of Lesson

Data Analysis
The levels of engagement and social skills were based on the interpretation of scale as shown in Table 3. If the mean value obtained in the scale was Often (O), so engagement was considered as high. Meanwhile, if the mean value obtained in the scale was Sometimes (S), so engagement was considered as medium and if the mean value obtained in the scale was Never(N), so engagement was considered low.

Table 3
Interpretation of Scale

Scale	Interpretation of Scale
Never (N)	Low
Sometimes (S)	Medium
Often (O)	High

Engagement Level Analysis
To identify the engagement level during online synchronous cooperative learning session via Google Meet among teacher trainees, data were taken using the 'Engagement Level Rubric' which consists of ten (10) items as shown below.

Table 4
Statistical Analysis for Engagement Level

No.	Items	Frequency (Percentage %)			Mean and Scale	Interpretation
		Scale: 1 Never (N)	Scale: 2 Sometimes (S)	Scale: 3 Often (O)		
E1	I asked questions during online discussions.	0 (0%)	17 (85%)	3 (15%)	2.15 (S)	Medium
E2	I made a presentation during online class session.	0 (0%)	7 (35%)	13 (65%)	2.65 (O)	High
E3	I shared draft of an assignment before discussing it with my lecturer during online class.	1 (5%)	18 (90%)	1 (5%)	2.00 (S)	Medium
E4	I used resources/handout given by lecturer during online class to discuss with peers virtually.	0 (0%)	5 (25%)	15 (75%)	2.75 (O)	High
E5	I discussed the draft with peers before coming to online class to have discussions with lecturer.	1 (5%)	11 (55%)	8 (40%)	2.35 (S)	Medium
E6	I worked with other students in order to complete the task given by the lecturer during the online class.	1 (5%)	5 (25%)	14 (70%)	2.65 (O)	High
E7	I engaged in discussions about the given task using Google Meet application during the online class.	0 (0%)	4 (20%)	16 (80%)	2.80 (O)	High

E8	I used other video conferencing applications (other than Google Meet) to discuss with other students outside the class.	0	4	16	2.80 (O)	High
		(0%)	(20%)	(80%)		
E9	I used WhatsApp/Telegram group or a chat box to communicate with lecturers and peers.	0	3	17	2.85 (O)	High
		(0%)	(15%)	(85%)		
E10	I discussed the assignments with lecturers when I was having difficulties during the online class.	0	9	11	2.55 (O)	High
		(0%)	(45%)	(55%)		
	Total Mean				2.56 (O)	High

n = 20 respondents

Table 4 above shows the statistical analysis for engagement level after the learning process happened. It also shows the mean for each of the items and the interpretation. The overall mean value was 2.56 for the engagement level during online synchronous cooperative learning via Google Meet among teacher trainees which was high interpretation. Most respondents gave the answer "Often (O)". Item E9 achieved the highest mean, which was 2.85 where respondents used WhatsApp/Telegram group or a chat box to communicate with lecturers and peers. Items E7 and E8 showed relatively high mean, which was 2.80, where respondents engaged in discussions about the given task using Google Meet application during the online class and used other video conferencing applications (other than Google Meet) to discuss with other students outside the class. In addition, both items E2 and E6 gave similar result which was 2.65. Item E2 highlighted that the samples conducted presentations during online class session. Meanwhile, item E6 mentioned that respondents worked with other students in order to complete the task given by the lecturer during the online class.

Out of the 10 items presented, the lowest mean was 2.00 and it came from item E3. It stated that respondents shared draft of an assignment before discussing it with the lecturer during online class. Eighteen samples (90%) chose Sometimes and one respondent (5%) for each scale (Never and Often) for this item. Accordingly, the mean for item E3 became the lowest. Based on Table 3, mean values were successfully recorded for each item in terms of engagement level during online synchronous cooperative learning session via Google Meet among teacher trainees. In conclusion, the level of engagement during online synchronous cooperative learning via Google Meet among teacher trainees was high.

Social Skill Analysis
This section is to identify the level of social skill during online synchronous cooperative learning session via Google Meet among teacher trainees. Data were taken using the 'Social Skill Rubric' which consists of ten (10) items as shown in the table below.

Table 5
Statistical Analysis for Social Skill

No.	Items	Frequency (Percentage %)			Mean and Scale	Interpretation
		Scale: 1 Never (N)	Scale: 2 Sometimes (S)	Scale: 3 Often (O)		
S1	I paid attention when others were talking during online class.	0	7	13	2.65 (O)	High
		(0%)	(35%)	(65%)		
S2	I asked friends for help if I have problem during online class.	1	13	6	2.25 (S)	Medium
		(5%)	(65%)	(30%)		
S3	I felt responsible to say something when no one responded to lecturers during online class.	0	6	14	2.70 (O)	High
		(0%)	(30%)	(70%)		
S4	I felt the urge to respond to lecturer's words/questions during online class.	0	5	15	2.75 (O)	High
		(0%)	(25%)	(75%)		
S5	I followed the lecturer's instructions and directions during online class.	0	6	14	2.70 (O)	High
		(0%)	(30%)	(70%)		
S6	I assisted a friend in completing the assignments given by the lecturer.	0	10	10	2.50 (S & O)	Medium & High
		(0%)	(50%)	(50%)		
S7	I chose my words carefully when having	0	7	13	2.65 (O)	High
		(0%)	(35%)	(65%)		

	discussions with others during online class.					
S8	I avoided saying things that might disturb the lecturer during online class.	1	2	17	2.80 (O)	High
		(5%)	(10%)	(85%)		
S9	I paid attention to lecturers when they are lecturing during online class.	0	6	14	2.70 (O)	High
		(0%)	(30%)	(70%)		
S10	I felt motivated to talk to my classmates when having discussion during online class.	1	8	11	2.50 (O)	High
		(5%)	(40%)	(55%)		
	Total Mean				2.62 (O)	High

n = 20 respondents

Table 5 above shows the statistical analysis for social skill rubric including the frequency and percentage for each Likert Scale (Never, Sometimes and Often). It also shows the mean for each of the items and the interpretation. The overall mean value was 2.62 for the level of social skill during online synchronous cooperative learning session via Google Meet among teacher trainees. Thus, it could be interpreted that the social skill level was high. Most samples chose "Often (O)" compared to other scales. Item S8 achieved the highest mean, which was 2.80 where respondents avoided saying things that might disturb the lecturer during online class. The item S4 showed a relatively high mean, which was 2.75, where respondents felt the urge to respond to lecturer's words/questions during online class. Items S3, S5 and S9 showed similar result which was 2.70. Item S3 stated that respondents felt responsible to say something when no one responded to lecturers during online class. Meanwhile, item S5 mentioned that respondents followed the lecturer's instructions and directions during online class. Lastly, item S9 highlighted that respondents paid attention to lecturers when they are lecturing during online class. Uniquely, item S6 recorded two interpretations namely Medium and High with a mean value of 2.50. Half of the respondents stated that they sometimes or often assisted a friend in completing the assignments given by the lecturer.

Out of the 10 items presented, the lowest mean was 2.25 and it came from item S2, which stated that respondents asked friends for help if having problem during online class. Thirteen respondents (65%) chose Sometimes, six respondents (30%) chose Often and only one respondent (5%) chose Never for this item. Accordingly, the mean for item S2 became the lowest. Based on Table 5, mean values were successfully recorded for each item in terms of the level of social skill during online synchronous cooperative learning session via Google Meet among teacher trainees. In conclusion, the level of social skill during online synchronous cooperative learning session via Google Meet among teacher trainees was high.

Discussion

Level of Engagement during Online Synchronous Cooperative Learning session via Google Meet among Teaacher Trainees

The engagement level of students during the online synchronous cooperative learning session via Google Meet among teacher trainees can be established by comparing the mean values of the post-test scores. From the results, most respondents chose Often for each item which was related to the level of engagement during the online synchronous learning. Next, the overall mean value was 2.56 which in the range of high for the engagement level rubric. Thus, it can be concluded that there was high level of engagement among the samples during an online synchronous cooperative learning session via Google Meet.

The finding of this study supported the data from research conducted by Perveen (2016) which stated one of the advantages of online synchronous cooperative learning is enhancing engagement levels (Perveen, 2016). In addition, item E9 gained the highest value due to the capability of the medium of communication such as Google Meet to provide instant feedback and answers. According to Perveen (2016), such capabilities are crucial because students have the chance to solve any misunderstanding quickly so that their engagement with the teaching materials can be maintained (Perveen, 2016). On the other hand, item E3 scored the lowest value probably because students were having not enough preparation and learning tools. This notion is supported by Nur Salina et al. (2020) who highlighted that the challenges associated with online synchronous learning are lack of training, lack of facilities and lack of infrastructure (Nur Salina et al., 2020).

Besides, the findings were also parallel to what was stated by Johnson et al (1991) on one of the principles of cooperative learning; to implement the cooperative learning approach effectively especially in terms of improving the engagement level among students, they should ask for help from their peers first before asking the help from instructors (Johnson et al., 1991). This is in line with one of the principles of cooperative learning by Johnson et al (1995) which is group interaction (Johnson et al., 1991). This principle was applied in Part 1 (Introduction to Lesson) of this study: where the teacher trainer organized the teacher trainees into small groups with mixed ability and suggested them how to work in groups. This phase involved interdependence among team members and encouraged them to get to know each other in the group and tried to understand the problems together before receiving any guidelines from the teacher trainer. Thus, by having better group interaction during online synchronous learning, students have the chance to have more engagement in class by sharing rather than study by themselves (Papadima-Sophocleous & Loizides,2016).

Next, the activities which contributed the most in increasing the engagement level were in Part 1: Introduction to Lesson, Part 2: Undertaking of Activities and Part 3: Conclusion of Lesson. Undeniably. these phases encouraged group interaction which ultimately stimulated engagement among team members. The teacher trainees presented problems to each other and understand the problems together. Afterwards, teacher trainees participated in discussion to define the problems and assigned assumptions together. Finally, the teacher trainees summarized the methods of problem solving and concluded the learning processes by presenting the group work report to the teacher trainer. According to Johnson et al (1995), group interaction (members' participation in helping others) and giving feedback for reflection aroused the engagement level (Johnson et al., 1995). Therefore, the engagement level increased during online synchronous cooperative learning session via Google Meet among teacher trainees following the Cooperative Learning Principle.

Level of Social Skill during Online Synchronous Cooperative Learning session via Google Meet among Teacher Trainees

The finding of this study indicated that the average mean value for the social skill rubric was at 2.62 which was in the range of high. Thus, it can be concluded that there was high level of social skill among the respondents during online synchronous cooperative learning session via Google Meet.

According to Jan (2020), social skill is related to the level of interaction that the students have with their teachers and also with their classmates. However, their lack of students' interaction among each other during an online learning session. The findings of this study showed that the highest mean value was 2.80 and it was recorded by item S8 (I avoided saying things that might disturb the lecturer during online class). The lowest mean value was in item S2 (I asked friends for help if I have problem during online class) at 2.25. Item S8 scored the highest which was due to the positive relationship that they have between emotional experience and social skill which has resulted them to have solid personal and social skill set (Shanmugasundaram and Mohamad, 2011). This is stated by Mendo-Lazaro et al (2018) who highlighted the capability of cooperative learning in nurturing interpersonal, social and teamwork skills among students (Mendo-Lazaro et al., 2018).

Other than that, the findings are also corresponding to one of the principles of cooperative learning which is negotiation (Johnson et al., 1995). According to Johnson et al (1991), to execute the cooperative learning environment effectively especially in terms of improving the social skill among students, they need to work together using cooperative learning methods (Johnson et al., 1995). Thus, online synchronous cooperative learning has resulted in more positive relationship among teacher trainees.

In addition, activity interdependence between team members in Part 1: Introduction to Lesson inspired the implementation of social skill. Part 1 required the teacher trainees to follow the lecturer's instructions during online class while assisted each other in the group to complete the assignments given. According to Johnson et al. (1995), negotiation is important in the development of social skills (Johnson et al., 1995). This notion was proven in the Cooperative Learning Principle, Part 2: Undertaking of Activities Part 2 encouraged the teacher trainees to work in their designated groups and therefore they felt motivated to talk and discuss among group members. Consequently, the level of social skill increased during online synchronous cooperative learning session via Google Meet among teacher trainees following the Cooperative Learning Principle.

Conclusion

To conclude, results of the study indicated high levels of engagement and social skill during online synchronous cooperative learning environment among teacher trainees. Thus, the online synchronous session which integrating the strategy of cooperative learning environment was proven to be meaningful. Therefore, online synchronous cooperative learning environment can be adapted in online teaching sessions at Institute of Teacher Education (IPG). The integration is vital to improve teacher trainees' engagement level and social skill during online teaching and learning sessions. This effort can support one of the missions of Institute of Teacher Education in Malaysia which is to possess a dynamic teacher development programme which can produce world-class teachers. It is hoped that IPG will be able to produce competent and skilful teachers by employing effective strategies either through face-to-face or online teaching and learning sessions.

Acknowledgements

References

Alberta, E. (2011). Review of the Social Skills Rating System (SSRS). Edmonton, Alberta, Canada.

Aliaga, M., & Gunderson, B. (2002). Interactive statistics. Virginia. *America: Pearson Education*.

Andrew, L., Wallace, R., & Sambell, R. (2021). A peer-observation initiative to enhance student engagement in the synchronous virtual classroom: A case study of a COVID-19 mandated move to online learning. Journal of University Teaching & Learning Practice, 18(4), 14.Apuke, O. D. (2017). Quantitative research methods: A synopsis approach. Kuwait Chapter of Arabian Journal of Business and Management Review, 33(5471), 1-8.

Azlan, C. A., Wong, J. H. D., Tan, L. K., Huri, M. S. N. A., Ung, N. M., Pallath, V., & Ng, K. H. (2020). Teaching and learning of postgraduate medical physics using Internet-based e-learning during the COVID-19 pandemic–A case study from Malaysia. *Physica Medica*, 80, 10-16.

Bandura, A. (1971). Social learning theory. *General Learning Press*.

Becker, B. A. (2013). A new meta-model of student engagement: The roles of student motivation and active learning.

Boring, E. G. (1954). The nature and history of experimental control. *The American Journal of Psychology*, *67*(4), 573-589.

Che Ahmad, C. N., Yahaya, A., & Sani, S. S. (2020). Pembangunan modul video amali (V-Lab) bagi mempertingkatkan pengajaran dan pemudahcaraan biologi tingkatan empat. *Jurnal Pendidikan Sains & Matematik Malaysia*, *10*(2), 1–7.

Choi, J. J., Robb, C. A., Mifli, M., & Zainuddin, Z. (2021). University students' perception to online class delivery methods during the COVID-19 pandemic: A focus on hospitality education in Korea and Malaysia. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 29, 100336.

Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst COVID-19. *Asian Journal of University Education*, *16*(2), 45-58.

Gresham, F. M., & Elliott, S. N. (1990). Social skills rating system manual. Circle Pines, MN: American Guidance Service.

Hassan, A., & Maharoff, M. (2014). The understanding of curriculum philosophy among trainee teachers in regards to soft skills embedment. International Education Studies, 7(12), 84-94.

Hayner, S. (1999). A Comparison of the Social Skills Rating System and the Preschool and Kindergarten Behavior Scales.

Ironsi, C. S. (2021). Google Meet as a synchronous language learning tool for emergency online distant learning during the COVID-19 pandemic: perceptions of language instructors and preservice teachers. *Journal of Applied Research in Higher Education*.

Jacobs, G. M. (2015). Collaborative Learning or Cooperative Learning? The Name Is Not Important; Flexibility Is. *Online Submission*, *3*(1), 32-52.

Jan, A. (2020). A phenomenological study of synchronous teaching during COVID-19: A case of an international school in Malaysia. *Social Sciences & Humanities Open*, *2*(1), 100084.

Jasmis, J., Aziz, A. A., Jono, M. N. H. H., Zamzuri, Z. F., & Elias, S. J. (2021). An analysis model for an integrated student activities management system for higher education during rmo/cmco/pasca covid-19 period in Malaysia. *Procedia Computer Science*, 179, 798-803.

Johnson, D. W. (1991). Cooperative Learning: Increasing College Faculty Instructional Productivity. ASHE-ERIC Higher Education Report No. 4, 1991. ASHE-ERIC Higher Education Reports, George Washington University, One Dupont Circle, Suite 630, Washington, DC 20036-1183.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1995). Circles of learning. Edina, MI. Interaction Book Company. 4th ed.

Lin, H. C., Hwang, G. J., Chang, S. C., & Hsu, Y. D. (2021). Facilitating critical thinking in decision making-based professional training: An online interactive peer-review approach in a flipped learning context. Computers & Education, 173, 104266.

Mareta, P. R., & Susanto, S. (2021). The Social Skills of Students in the Pandemic Period (The Case Study in SMAN 1 Kedunggalar, Ngawi District, East Java, Indonesia). *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, *4*(1), 369-376.

Mathew, V., & Chung, E. (2021). University Students' Perspectives on Open and Distance Learning (ODL) Implementation Amidst COVID-19. *Asian Journal of University Education*, *16*(4), 152-160.

Mendo-Lazaro, S., Leon-del-Barco, B., Felipe-Castano, E., Polo-del-Rio, M. I., & Iglesias-Gallego, D. (2018). Cooperative team learning and the development of social skills in higher education: The variables involved. *Frontiers in psychology*, 9, 1536.

Nasri, M. N., Husnin, H., Mahmud, S. N. D., & Halim, L. (2020). Mitigating the COVID-19 pandemic: a snapshot from Malaysia into the coping strategies for pre-service teachers' education. *Journal of Education for Teaching*, *46*(4), 546-553.

Nur Salina, I., Mazlina, N., Bakar, A., & Sharifah Wajihah Wafa, S. S. T. W. (2020). Online learning challenges during pandemic COVID-19 in Malaysian higher learning institution. *Universal Journal of Educational Research*, *8*(12), 7151-7159.

Panlumlers, K., & Wannapiroon, P. (2015). Design of cooperative problem-based learning activities to enhance cooperation skill in online environment. *Procedia-Social and Behavioral Sciences*, 174, 2184-2190.

Papadima-Sophocleous, S., & Loizides, F. (2016). Exploring the benefits and disadvantages of introducing synchronous to asynchronous online technologies to facilitate flexibility in learning. CALL communities and culture–short papers from EUROCALL, 2016, 363-368.

Perveen, A. (2016). Synchronous and asynchronous e-language learning: A case study of virtual university of Pakistan. *Open Praxis*, *8*(1), 21-39.

Pusat Pembangunan Akademik Institut Pendidikan Guru Malaysia. (2017). Buku Panduan Akademik Program Ijazah Sarjana Muda Perguruan Dengan Kepujian (PISMP).

Rafique, G. M., Mahmood, K., Warraich, N. F., & Rehman, S. U. (2021). Readiness for Online Learning during COVID-19 pandemic: A survey of Pakistani LIS students. *The Journal of Academic Librarianship*, *47*(3), 102346.

Raine, D., & Gretton, S. (2013). Student engagement survey. *Journal for Excellence in Teaching and Learning*, 1-21.

Roseth, C., Akcaoglu, M., & Zellner, A. (2013). Blending synchronous face-to-face and computer-supported cooperative learning in a hybrid doctoral seminar. TechTrends, *57*(3), 54-59.

Sawyer, J., & Obeid, R. (2017). Cooperative and collaborative learning: Getting the best of both words. How we teach now: the GSTA guide to student-centered teaching, 163-177.

Selvanathan, M., Hussin, N. A. M., & Azazi, N. A. N. (2020). Students learning experiences during COVID-19: Work from home period in Malaysian Higher Learning Institutions. Teaching Public Administration, 0144739420977900.

Setyawan, A., Aznam, N., & Citrawati, T. (2020). Effects of the Google Meet assisted method of learning on building student knowledge and learning outcomes. *Universal Journal of Educational Research*, *8*(9), 3924-3936.

Shafie, B. H. M. (2020). Student Teachers' Perception Towards the Use of Online Learning During Covid-18 Movement Control Order (MCO).

Shanmugasundaram, U., & Mohamad, A. R. (2011). Social and emotional competency of beginning teachers. Procedia-Social and Behavioral Sciences, 29, 1788-1796.

Shikalepo, E. E. (2020). Defining a Conceptual Framework in Educational Research.

Shukri, A., Nordin, L., Salleh, F. I. M., Raidzwan, S. N. M., & Ahmad, R. (2020). UniKL students' perception on synchronous learning using ICT as learning tools to learn english. *Journal of critical reviews*, *7*(8), 793-796.

Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation guidelines for IS positivist research. Communications of the Association for Information systems, *13*(1), 24.

Stuart, D. L., Gresham, F. M., & Elliott, S. N. (1991). Teacher ratings of social skills in popular and rejected males and females. School Psychology Quarterly, *6*(1), 16.

Sugden, N., Brunton, R., MacDonald, J., Yeo, M., & Hicks, B. (2021). Evaluating student engagement and deep learning in interactive online psychology learning activities. Australasian Journal of Educational Technology, 37(2), 45-65.

Taat, M. S., & Francis, A. (2020). Factors Influencing the Students' Acceptance of E-Learning at Teacher Education Institute: An Exploratory Study in Malaysia. *International Journal of Higher Education*, *9*(1), 133-141.

Williams, C. (2011). Research methods. *Journal of Business & Economics Research* (JBER), *5*(3).

Wong, K. Y., Sulaiman, T., Ibrahim, A., Mohd, A. G. K., Hassan, O., & Jaafar, W. M. W. (2021). Secondary school teachers' psychological status and competencies in e-teaching during Covid-19. Heliyon, *7*(11), e08238.

Yu, Zhonggen (2022). Sustaining Student Roles, Digital Literacy, Learning Achievements, and Motivation in Online Learning Environments during the COVID-19 Pandemic. Sustainability 2022, 14, 4388. https://doi.org/10.3390/su14084388.

Zayia, D., Parris, L., McDaniel, B., Braswell, G., & Zimmerman, C. (2021). Social learning in the digital age: Associations between technoference, mother-child attachment, and child social skills. *Journal of school psychology*, 87, 64-81.

Zulkifli, N. N., Abd Halim, N. D., Yahaya, N., & Van der Meijden, H. (2020). Patterns of critical thinking processing in online reciprocal peer tutoring through facebook discussion. IEEE Access, 8, 24269-24283.