The Influence of Online Teaching Presence on Cognitive and Social Presence for Group Work among Pre-Degree Students

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Abstract
Since the COVID-19 pandemic necessitated Malaysia's shift from in-person classes to remote online learning, the subject of collaborative work online has been a topic of ongoing discussion within the field of education. Both educators and learners still had to fulfil the requirements in teaching and learning aspect, which encompassed all classes through assessments conducted on an individual and group work basis. This study aims to examine the impact of online teaching presence on cognitive and social presence for group work among undergraduate students. A quantitative survey was conducted with 200-pre-degree students from a public institution in Malaysia, using a framework adapted from Arbaugh et al. (2008). The survey included four sections: demographics, teaching presence, cognitive presence, and social presence. The results of this study indicate that there is a significant balanced combination of teaching, cognitive and social presence to promote successful learning in group setting. A strong teaching presence was found to enhance both cognitive and social engagement, leading to more meaningful interactions and deeper understanding. These findings highlight the need for educators to create online learning environments that support all three types of presence to maximize educational effectiveness. Conclusively, this study emphasizes the importance of a balanced approach to teaching, cognitive, and social aspects to facilitate comprehensive learning experiences. Future research should explore these dynamics across different educational contexts and investigate their long-term effects on academic performance and student satisfaction.
Keywords: Online Group Work, Teaching Presence, Cognitive Presence, Social Presence.

Introduction

Background of Study

In the year 2020, Malaysia was introduced with the Movement Control Order (MCO) due to the COVID-19 pandemic. The sudden implementation of the MCO has resulted with the sudden shift in the education system from physical teaching and learning to online learning. However, online learning has long been introduced in Malaysia where it is aligned with the government's objective and strategies outlined in the Malaysian Education Blueprint 2013-2025. The blueprint specifically highlighted that the Malaysian education system should focus on 21st-century learning in making sure that both teachers and students are well-equipped with Information and Communication Technologies (ICT) skills (Ministry of Education Malaysia, 2013). The result of the implementation of MCO has greatly utilised online learning which positively influences the blueprint's initiative towards Malaysia's education system where the education sector can finally become more familiar with many online learning platforms, artificial intelligence (AI) for education purposes and utilising social media in teaching and learning, greatly improving the education system (Lee et al., 2020). This also continues further in the current post-pandemic education landscape where some higher education institutions are either using the hybrid learning approach or full online learning approach in regards to teaching and learning.

For educators, it is important for them to be able to have a good engagement with the students especially in an online learning environment to ensure that students can fully immerse themselves with the lessons. Online learning environment creates several drawbacks to both educators and students where it can become a distraction, inactive situation as well as influence cheating behaviour with the tasks given (Shargh & Topal, 2022). However, Wang et al. (2021) highlighted that it is important for educators to have a strong teaching presence in ensuring a good lesson development (lesson plan), able to facilitate the class and have a strong sense of direction in the students' cognitive and social processes to reduce the setbacks in online learning environment. As online learning is a method which most Malaysian educators are still trying to adapt to, it is still important to have a good utilisation of teaching presence in making sure that educators can make the lessons personally meaningful and educational worthwhile lesson outcomes.

Law et al (2019), stated that teaching presence was found to have positive impacts on the cognitive presence and social presence towards students in an online learning environment, as well as improving the overall learning performance if the tasks were done in group. As online learning set several restrictions for educators to interact with students, encouraging online group work will allow students to to be able to interact with fellow peers socially and emotionally as well as demonstrate the ability to have students lead discussion and multiple perspectives in the completion of the tasks given (Caskurlu et al., 2020; Law et al., 2019). Moreover, the ability to work as a group and able to develop deep discussions with fellow peers aligned with Chapter 3 and Chapter 7 in the Malaysia Education Blueprint 2013-2025 as it is to foster unity among students in order to improve students' academic performance, possess a wider range of perspectives on general issues and good understanding on 21st century learning (Ministry of Education Malaysia, 2013). Hence, as Malaysia's current education landscape utilises online learning, it is important for educators to exhibit an effective teaching presence to positively influence students' cognitive presence

and social presence by working in groups to potentially improve the students' academic performance.

Statement of Problem

In this modern era of technology, online learning and the collaboration through group work activities has made it easier for educators and students to remain in touch remotely. Online learning has allowed students to continue their education without interruption by giving them remote access to course materials, assignments, and instructional support (Abidin et al., 2023). Hence, online learning is becoming more and more important in the teaching and learning process.

There are few past studies that have demonstrated positive results which are related to online teaching presence. Gurley (2018), found a significant increase in student satisfaction when educators maintained a high level of teaching presence during online classes. Besides, teaching presence differs for both the online learning environment and face-to-face classroom because the role of educators is very important as they need to still communicate effectively even being separated from their students by place and time. Moreover, effective teaching presence also fosters active student participation and cultivates a strong sense of community during online classes (Singh et al., 2022). Educators must engage in activities that help students obtain a greater level of comprehension throughout the course to effectively aid learning during online classes.

However, various obstacles stand in the way of achieving the ideal circumstance in which online instructional presence improves cognitive and social presence during group work. During online classes, the interaction among students and students, on the other hand among the educators and students is too limited which lessens the development of cognitive presence (Kalman et al., 2020). In another study by Anam & Hitipeuw (2022), they identified that the lack of instant face-to-face interaction in online situations makes promoting social presence slightly difficult to achieve. Even though previous studies have extensively focused on analysing the effects of social and cognitive presence, the exploration of teaching practices and their contribution of social and cognitive presence in online situations has been inadequately investigated. Thus, this research will address the gap by investigating the relationship between online teaching presence and the development of cognitive and social presence during group work activities within online learning environments and determining effective techniques for fostering these qualities in online learning environments to improve student learning outcomes.

Objective of the Study and Research Questions

This study is done to explore perception of learners on their use of learning strategies. Specifically, this study is done to answer the following questions;
- How do learners' online teaching presence influence group work?
- How do learners perceive cognitive presence in online group work?
- How do learners perceive social presence in online group work?
- Is there a relationship between teaching, cognitive and social presence?

Literature Review
Online Learning: The Influence of Teacher Presence

Teachers play a crucial role in guiding and facilitating the learning process. Their presence in online learning allows them to provide explanations, clarify doubts, and offer personalized assistance to students. They can design and deliver instructional materials, organize activities, and create assessments that cater to the needs of individual learners. The teacher's presence can be thought of as the visibility that influences pupil participation and engagement (Caskurlu et al., 2020). It provides guidance for instructors on the design and organisation of courses with a view to facilitating student learning. Their presence helps create a sense of belonging, fosters peer-to-peer interaction, and promotes collaborative learning experiences (Wang et al., 2021). Teachers provide instructional support and timely feedback in online learning, which is crucial for student learning and improvement. Research has shown that effective feedback from teachers enhances student understanding, encourages critical thinking, and promotes self-regulation in online learning environments (Kebritchi et al., 2017). Teachers play a crucial role in facilitating social interaction and collaboration among students in online learning settings. Direct instruction entails instructors delivering content or posing questions, confirming understanding through assessments and feedback, identifying and addressing misconceptions, and facilitating students' learning journey. By engaging in these components, teachers establish their presence and create supportive learning environments.

Online Group Work

Online group work can be previewed as a necessity for pre-degree students. According to Smith et al (2011), group work is aimed to transform the class into supportive learning teams. The usage of online medium in teaching and learning has been widely used by students as well as educators. Online learning has the capacity to break down barriers that have restricted individuals from an equitable education in the past. To establish a learning environment that is conducive for all participants, a study was done to fulfil the students' and be made a priority in order to establish courses that are accessible for all learners (Oswald & Meloncon, 2014).

Past Studies on Online Group Work

Many studies have been conducted to examine teacher's presence in online learning engagement. A study by Kilis and Yildirim (2019), investigated the posting patterns of students' cognitive presence, social presence, and teaching presence in an online associate degree program. The study included 91 students who participated in synchronous sessions and asynchronous activities over a 16-week period using Moodle as the learning management system and Facebook for communication. The findings revealed that students' postings demonstrated significant levels of teaching presence, cognitive presence, and social presence. These presences were influenced by class topics based on real-life cases and complemented by reflective activities. The study highlighted that students excelled in the online setting when certain conditions were met, such as active communication in structured discussions, the existence of cooperative student groups, regular engagement from instructors, and comprehensive instant feedback. Overall, the study identified potential remedies to challenges in managing a large online classroom. By focusing on relevant class topics, incorporating reflection, promoting active communication, fostering cooperative group work,

ensuring instructor involvement, and providing comprehensive feedback, educators can enhance student experiences and outcomes in online learning environments.

Another study done in 2020 emphasized the importance of student satisfaction in an online learning environment. Nasir (2020), explored the relationship between students' satisfaction and social presence during their active participation in online discussions on the designated learning management system (LMS) of the classroom. The study included 3000 online students from a private higher educational institute in Malaysia, who were enrolled in an online program for a semester. The findings revealed that social presence had a significant influence on predicting the level of course satisfaction. The students demonstrated high levels of interaction and social presence by actively engaging with their classmates. The study observed that a higher level of social presence corresponded to a higher level of course satisfaction, supported by affective expression, group cohesion, and open communication among the participants. Additionally, the study noted that participants aged 22 to 35 exhibited a high level of self-direction and independence in their learning. Other important factors identified in the study were the significance of instructor feedback in encouraging student-to-student conversation and the comfort level of students who had prior experience with online courses. The number of completed courses by a student also played a significant role in determining their satisfaction with a course. Therefore, instructors should be mindful of students' comfort and familiarity with the course and its components, while also providing prompt feedback and technical support at the start of the course.

Conceptual Framework
Figure 1 shows the conceptual framework of the study. This study explores the influence of online teaching presence on cognitive presence and social presence for group work among pre-degree students. Muir et al (2020), explained that group work activity in completing certain tasks, regardless of physical interaction or online interaction, promotes collaborative learning, improves communication skills, develops critical thinking and showcases comfort among peers socially and emotionally. Furthermore, in an online learning environment, social presence of group work can be fully enhanced through interaction especially among Malaysian pre-degree students as they are a group of students that are trying to survive the academic journey for one year. Aderibigbe (2021), also posited that educators play an important role in facilitating online group work activities by making sure that it can positively influence students' cognitive presence and social presence to further ensure that students achieve the learning outcomes that were intended. Hence, this study investigates the relationship between teaching presence on pre-degree students' cognitive presence and social presence.
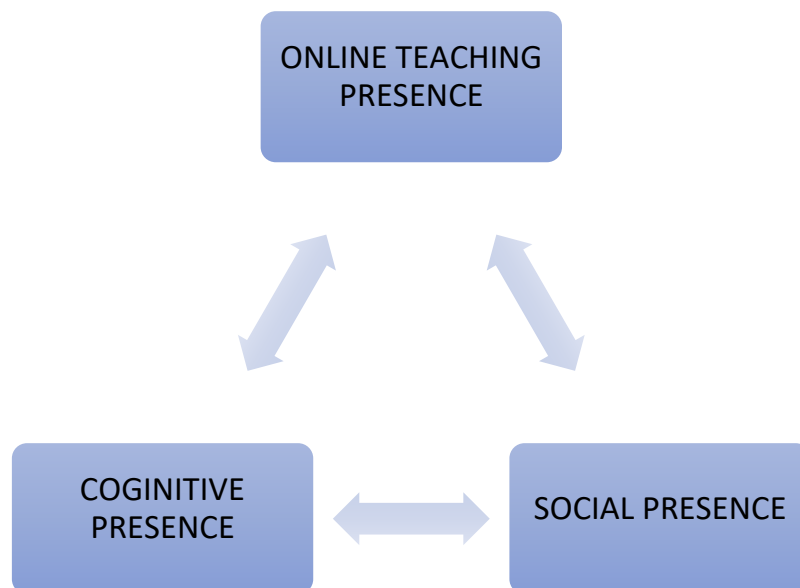
Figure 1- Conceptual Framework of the Study -
The Influence of Online Teaching Presence on Cognitive and Social Presence

Methodology

This quantitative study is done to explore motivation factors for learning among undergraduates. A purposive sample of 200 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Aderibigbe (2021), to reveal the variables in table 1 below. The survey has 4 sections. Section A has items on demographic profile. Section B has 7 items on cognitive presence. Section C has 8 items on social presence. Section D has 8 items on teaching presence.

Table 1
Distribution of Items in the Survey

SECTION	ELEMENTS Aderibigbe (2021)	NO. OF ITEMS
B	COGNITIVE PRESENCE	7
C	SOCIAL PRESENCE	8
D	TEACHING PRESENCE	8
		23

Table 2
Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.852	23

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .852, thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

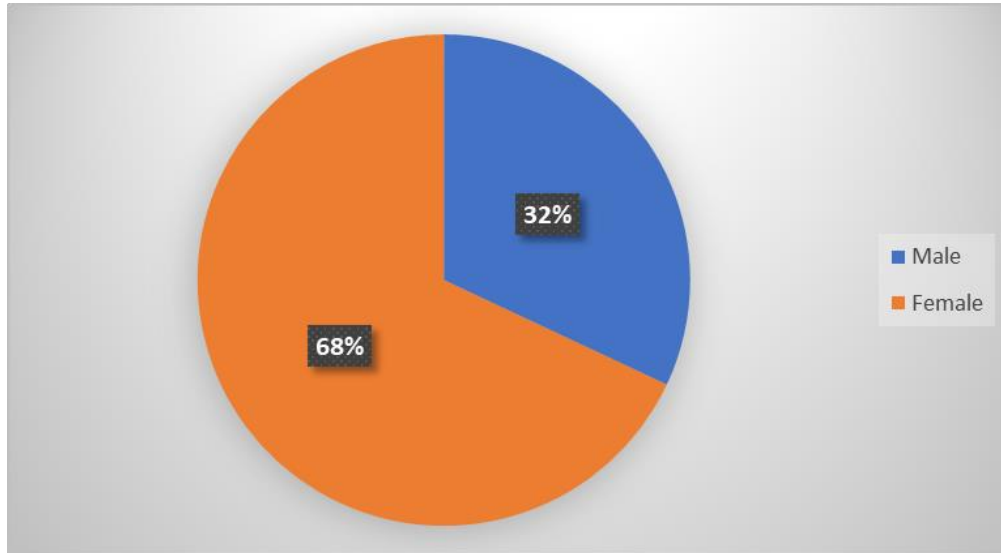**Findings**
Findings for Demographic Profile
Q1 Gender

Figure 2- Percentage for Gender

Figure 2 depicts the gender percentage. 32% of respondents are male and 68% of respondents are female respondents.
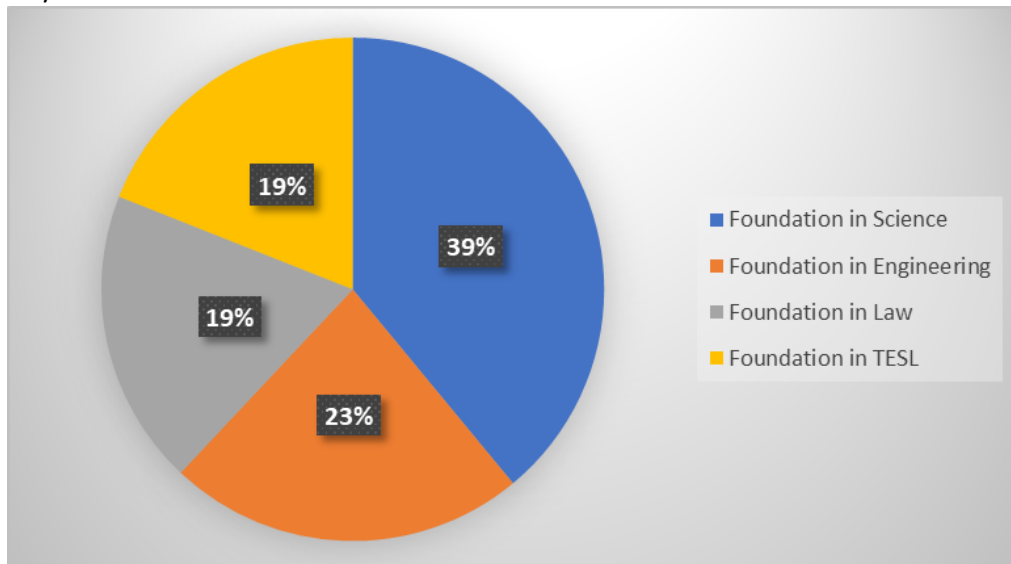
Q2 Discipline/Cluster

Figure 3- Percentage for Discipline

Figure 3 illustrates the proportion of discipline. Findings indicated that 39% of the participants were enrolled in Foundation in Science, while 23% were students in Foundation in Engineering. Conversely, both Foundation in Law and Foundation in TESL accounted for an equal percentage of 19%.
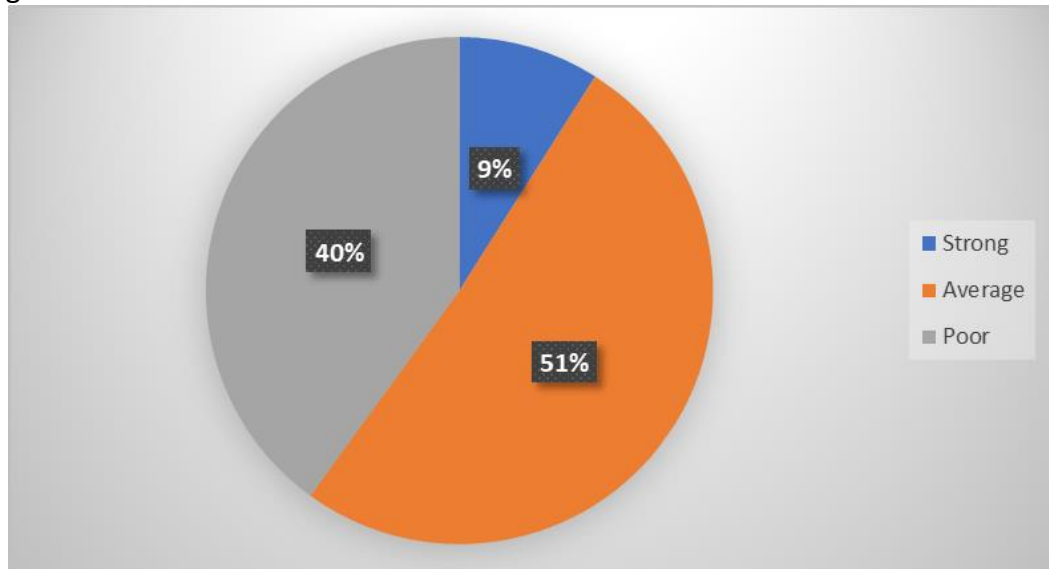
Q3 Strength of Wifi

Figure 4- Percentage for Strength of Wifi

Figure 4 illustrates the proportion of Wi-Fi signal strength. Merely 9% of the participants possess a strong internet connection. 51% of the participants possess a moderate connection, while 40% endure a poor Wi-Fi connection.
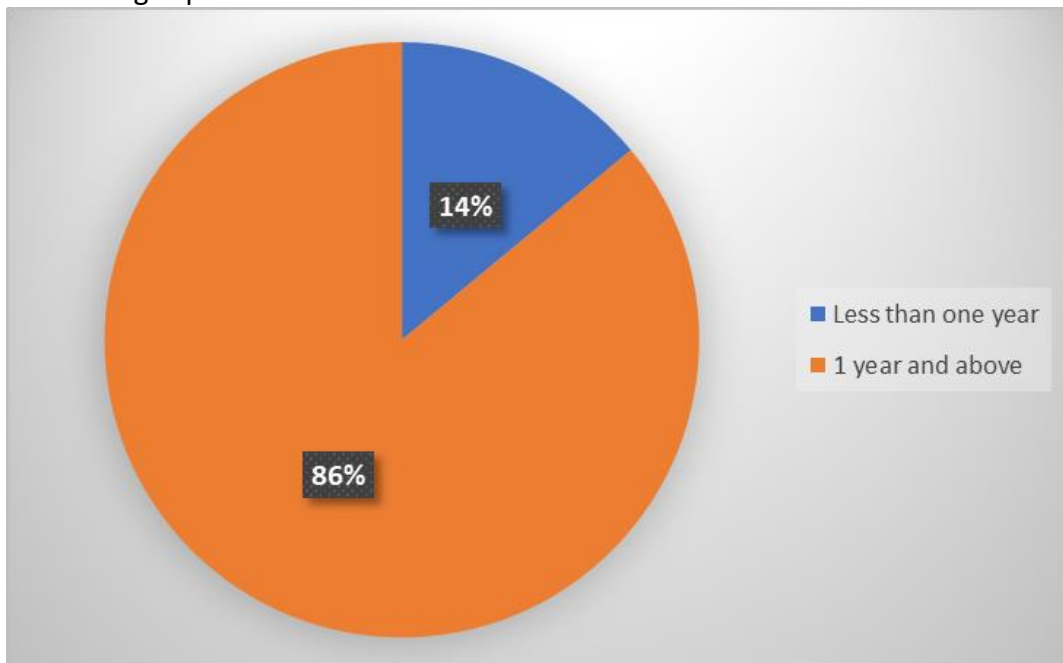
Q4 Online Learning Experience

Figure 5- Percentage for Online Learning Experience

Figure 5 displays the proportion for internet-based learning experience. It is evident that 14% of the participants possess an experience of less than one year. Conversely, 86% have an experience of 1 year or more in online learning.

Findings for Teaching Presence

This section presents data to answer research question 1- How do learners online teaching presence influence group work. Table 7 shows the mean for teaching presenc (Teaching Presence)
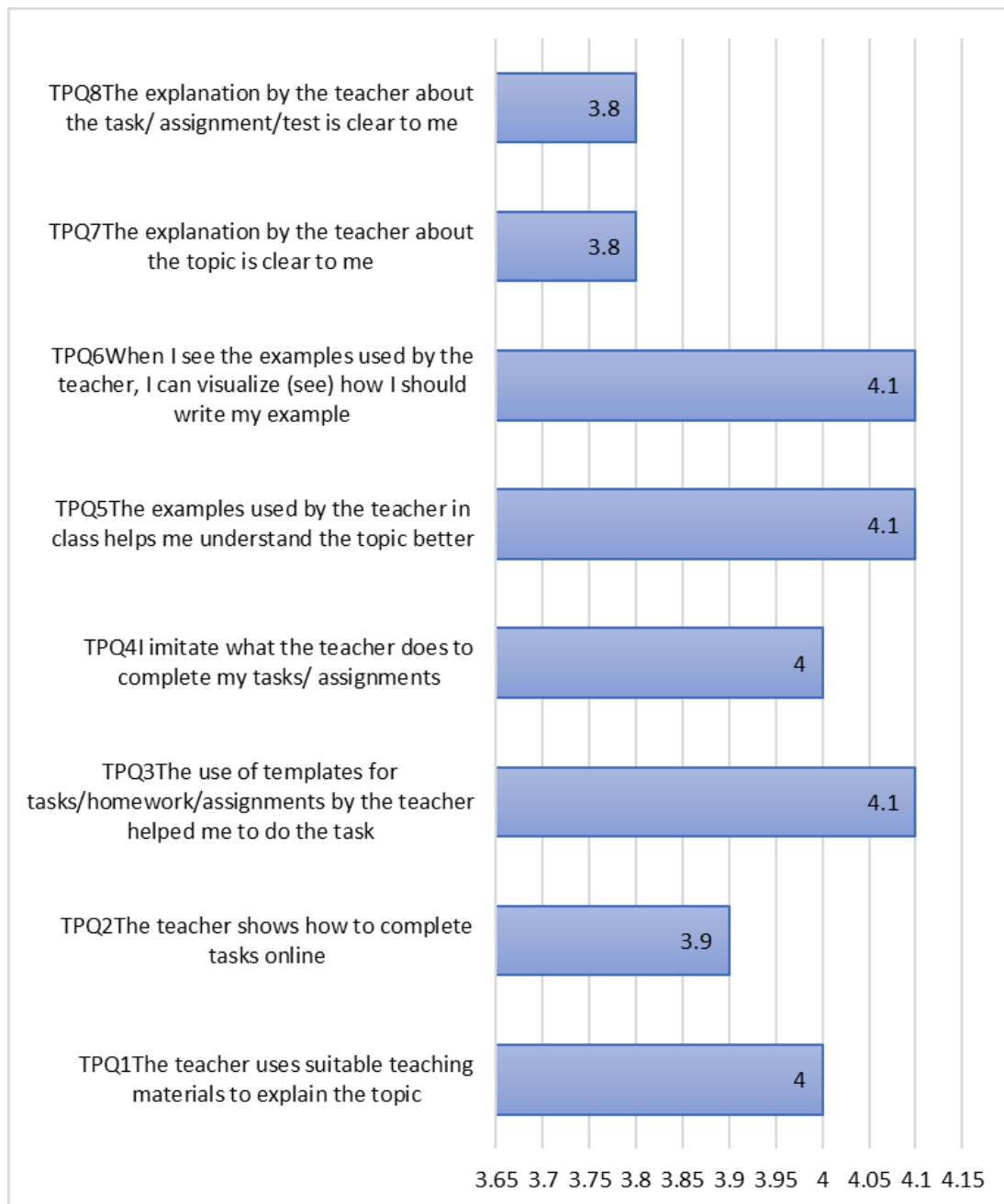

Figure 6- Mean for Teaching Presence

Figure 6 depicts the mean for teaching presence .Based on the items, the highest mean score (4.1) is shared between 3 items which are , "The use of templates for tasks/homework/assignments by the teacher helped me to do the task", "The examples used by the teacher in class helps me understand the topic better" and "When I see the examples used by the teacher, I can visualize (see) how I should write my example". Followed by 2 items with mean score of (4.00) "I imitate what the teacher does to complete my tasks/ assignments" and "The teacher uses suitable teaching materials to explain the topic". Whilst

items "The explanation by the teacher about the topic is clear to me" and "The explanation by the teacher about the task/ assignment/test is clear to me" recorded the lowest mean score with 3.8.

Findings for Cognitive Presence
This section presents data to answer research question 2- How do learners perceive cognitive presence in online group work
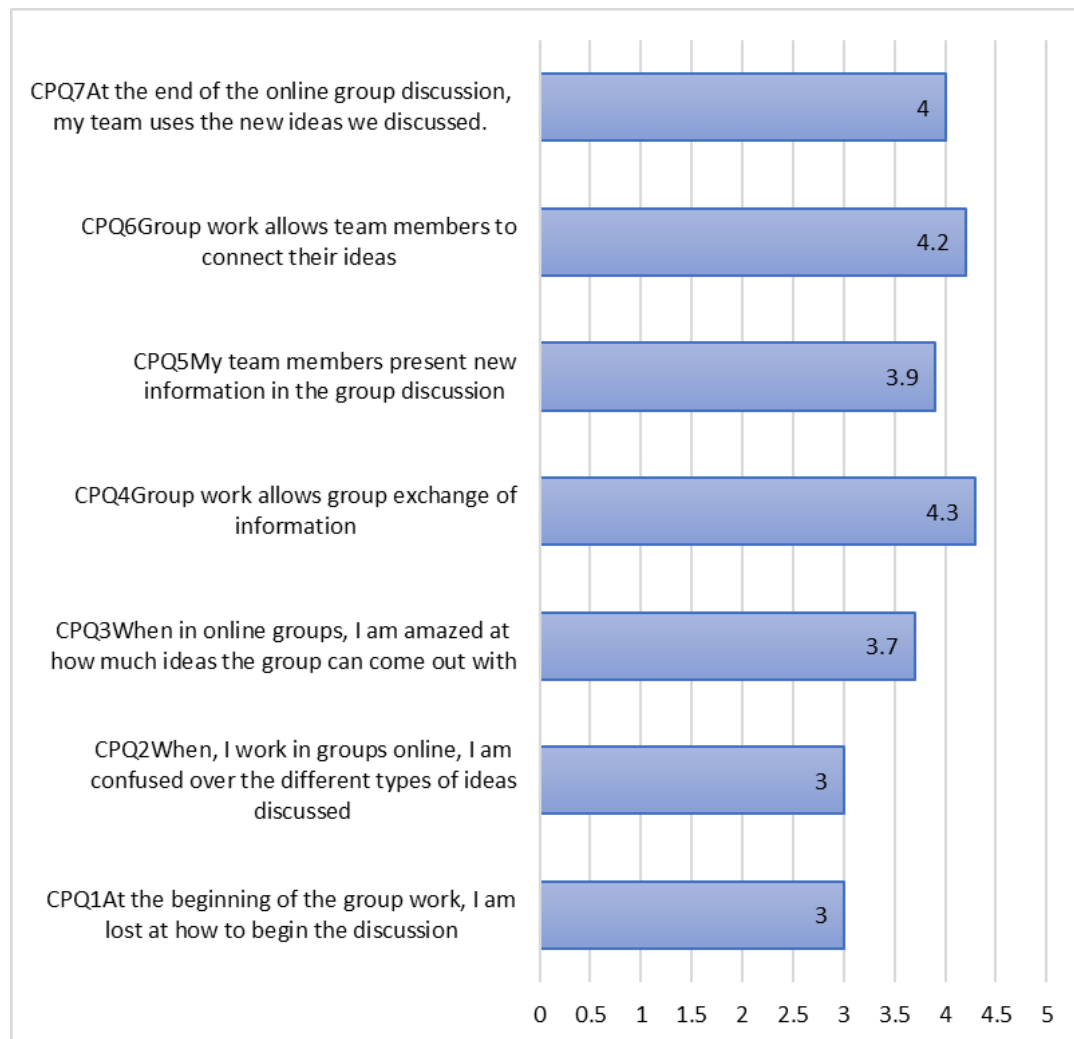(Cognitive Presence)

Figure 7- Mean for Cognitive Presence

Figure 7 is the portrayal of Mean for Cognitive Presence. Based on the items, the highest mean score is (4.3) for the item "Group work allows group exchange of information". Followed by item "Group work allows team members to connect their ideas" with (4.2) mean score. The lowest mean score is (3) shared between 2 items which are "At the beginning of the group work, I am lost at how to begin the discussion" and "When I work in groups online, I am confused over the different types of ideas discussed".

Findings for Social Presence

This section presents data to answer research question 3- How do learners perceive social presence in online group work?
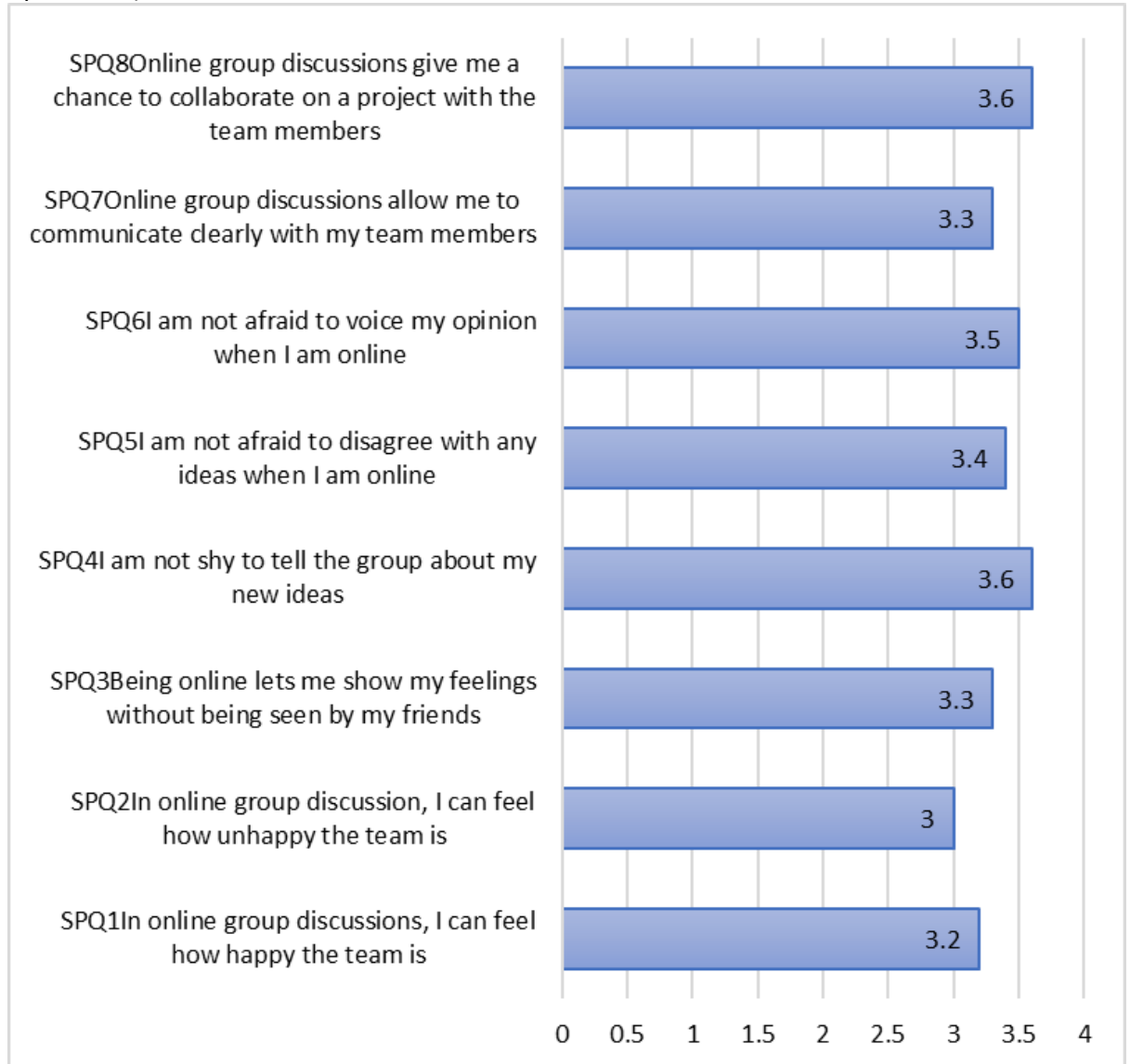
(Social presence)

Figure 8- Mean for Social Presence

Figure 8 shows the mean for social presence. Based on the items, the highest mean score (3.6) is shared between 2 items which are "Students are not shy to tell the group about their new ideas" and "Online group discussions give them a chance to collaborate on a project with their team members". Followed by, "I am not afraid to voice my opinion when I am online" and "I am not afraid to disagree with any ideas when I am online" with the mean score of 3.5 and 3.4 respectively. Item "In online group discussion, I can feel how unhappy the team is" recorded the lowest mean score of 3.

Findings for Relationship between Teaching, Cognitive and Social Presence

This section presents data to answer research question 4- Is there a relationship between teaching , cognitive and social presence?

To determine if there is a significant association in the mean scores between metacognitive, effort regulation, cognitive, social and affective strategies data is anlaysed using SPSS for correlations. Results are presented separately in table 3, 4, 5 and 6 below.

Table 3
Relationship between Teaching and Cognitive Presence

Correlations

		TEACHING	COGNITIVE
TEACHING	Pearson Correlation	1	.333**
	Sig. (2-tailed)		.000
	N	200	200
COGNITIVE	Pearson Correlation	.333**	1
	Sig. (2-tailed)	.000	
	N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows there is an association between teaching and cognitive presence. Correlation analysis shows that there is a moderate significant association between teaching and cognitive presence (r=.333**) and (p=.000). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a moderate positive relationship between teaching and cognitive presence.

Table 4
Relationship between Teaching and Social Presence
Correlations

		TEACHING	SOCIAL
TEACHING	Pearson Correlation	1	.426**
	Sig. (2-tailed)		.000
	N	200	200
SOCIAL	Pearson Correlation	.426**	1
	Sig. (2-tailed)	.000	
	N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows there is an association between teaching and social presence. Correlation analysis shows that there is a moderate significant association between teaching and social

presence (r=.426**) and (p=.000). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a moderate positive relationship between teaching and social presence.

Table 5
Relationship between Cognitive and Social Presence

Correlations

		COGNITIVE	SOCIAL
COGNITIVE	Pearson Correlation	1	.359**
	Sig. (2-tailed)		.000
	N	200	200
SOCIAL	Pearson Correlation	.359**	1
	Sig. (2-tailed)	.000	
	N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5 shows there is an association between cognitive and social presence. Correlation analysis shows that there is a moderate significant association between cognitive and social presence (r=.359**) and (p=.000). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a moderate positive relationship between cognitive and social presence.

Conclusion
Summary of Findings and Discussions
The findings showed that teaching presence, cognitive presence and social presence have had beneficial effects on students in their experience of learning online. In terms of teaching presence, respondents involved in this study stated that the role of educators in online learning ease their learning journey as the use of templates for assignments and homework helped them to complete their task. The examples utilized by the educator in class also aided them in comprehending the subject more effectively and they were able to observe the illustrations demonstrated by the instructor. Past study by Kilis and Yildirim (2019) supported this view that students thrived in the virtual environment when there is consistent involvement from educators and thorough immediate response. This implies that students can thrive in online education when educators are actively engaged and offer consistent assistance, as well as when they receive timely and comprehensive answers to their questions. Hence, these factors contribute to establishing an interactive and conducive digital learning atmosphere that promotes student success.

Secondly, cognitive presence is an essential term for explaining the development of thoughts over time in online inquiry-based interactions. It has a crucial function in comprehending how thoughts develop and progress over time as learners engage in online discussions, and actively build knowledge. The findings in this study showed integrating and applying knowledge acquired during online learning created an opportunity for learners to acquire abilities such as implementing the information in everyday situations and generating solutions to address challenges. Nevertheless, there are several barriers that hinder the attainment of the perfect situation in which online teaching presence enhances cognitive presence during collaborative tasks. Kalman et al (2020), stated that in the context of virtual classes, the level of engagement between peers, as well as between instructors and students, is insufficient, thereby impeding the cultivation of cognitive presence.

Moreover, this study highlights the significance of social presence in influencing a favourable online learning encounter. Virtual group discussions provide learners with an opportunity to collaborate on a project with the team members. On the other hand, learners are not hesitant to share their fresh concepts with the group. In agreement, Nasir (2020) stated that the students showed elevated levels of interaction and social presence by actively participating with their peers. There was a greater level of course satisfaction, backed by emotional expression, team unity, and transparent communication among the learners too. Furthermore, the research highlighted that learners displayed a significant degree of self-guidance and autonomy in their educational pursuits. Acts of kindness from classmates can also improve students' feeling of belonging and interaction within and outside the class, which can positively impact students' social involvement. Through this study, it can be concluded that the relationship between the three variables is proven to be highly significant with a moderate positive relationship. Hence, a favourable virtual learning encounter could be achieved by incorporating a blend of teaching presence, cognitive presence, and social presence to promote efficient learning.

(Pedagogical) Implications and Suggestions for Future Research

The findings prove the existence of positive influence of teaching presence on cognitive presence and social presence among pre-degree students, which highlighted the students' active participation in online group work by active in-depth discussion, able to interact emotionally and socially, and allowing peer review sessions in the tasks given can lead to the improvement of the students' academic performances. However, future research is warranted to explore the influence of other types of presence beyond teaching presence, cognitive presence and social presence that could also be implemented in online group work that could improve online teaching and learning. Instructor presence, learner presence, emotional presence and there are several presences that have been identified but have yet contributed to the improvement of online group work especially among pre-degree students in Malaysia in this post-pandemic landscape. Another potential future research that could be done is by conducting a comparative analysis in determining which presence has a more significant impact in online group work and to include a bigger sample size by perhaps comparing two different universities that have pre-degree courses. This could also lead to a finding that provide either similar or different significant influence on the type of presence in online group work among two different pre-degree institutions, which could provide a positive reason for Malaysian educators to focus on one type of presence in their lessons instead of many presences. Lastly, future research should consider revising the adapted

questionnaires from several past research to better understand the which presence is more dominant in a hybrid learning environment that may lead to more reliable findings, benefitting the Malaysia education system in this post-pandemic era where a mixture of traditional approach and online learning approach is more preferred by both educators and students.

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