An Investigation of Relationship Across All Types of Presence in Online Learning

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Abstract
Online learning in recent years has been the subject of research as the platform is proving itself to be crucial in modifying face to face classes to an online, internet mediated platform. As the online learning landscape continues to progress, it becomes important to understand the various factors that contribute to the effectiveness of this mode. One way to ensure the effectiveness of online learning is to refer to the Community of Inquiry (COI) framework which consists of three key elements which are social presence, teaching presence and cognitive presence. Therefore, this study investigated how learners view and perceive their cognitive, teaching and social presence in an online learning environment and also determined whether there are correlations between the types of presence in online learning. This quantitative study has a purposive sample of 169 participants who responded to a four –part survey designed to gauge their perception on the three key elements of online presence. The findings from the study suggest a significant relationship between all three types of presence during online learning in which the interconnectedness between the elements helps to create a conducive and positive online learning environment for students. Therefore, by being aware of the three presences, learners and instructors can ensure an online structure that is beneficial and meaningful.
Keywords: Online Learning, Cognitive Presence, Social Presence, Teacher Presence.

Introduction
Background of Study

In the recent development of pedagogical approaches in teaching and learning, instructors and learners have experienced major changes in the dispersal of knowledge. Covid-19 has transformed the way classes are conducted. Due to the limitations of opportunities to meet face to face, online learning have created a thriving ecosystem of virtual educational environments, offering learners unprecedented flexibility, convenience, and access to a wide range of educational opportunities. As the online learning landscape continues to evolve, it becomes imperative to understand the various factors that contribute to the effectiveness of this mode of education.

Online Learning encompasses a range of technologies such as the worldwide web, email, chat, new groups and texts, audio and video conferencing delivered over computer networks to impart education.

Online learning encompasses a range of technologies such as the worldwide web, email, chat, new groups and texts, audio and video conferencing delivered over computer networks to impart education (Indira & Sakhi, 2016). According to Nagel and Kotze (2010) successful online learning starts with proper instructional design. One way to achieve this is to refer to the Community of Inquiry (COI) framework which consists of three key elements namely social presence, teaching presence and cognitive presence (Garrison et al., 2007). Based on the recent research on online learning, the findings have been pointed out to the implications of COI framework in online learning have provided insight in providing meaningful learning in online learning.

As one of the countries that has been impacted by the pandemic, Malaysia's education system has endured changes in the teaching and learning process, switching from the traditional face-to face learning to online learning in recent years. The investigation of online presences in online learning is highly relevant considering the country's growing focus on digital education as it can contribute to the improvement of online education quality, promoting student engagement and interaction, develop critical thinking skills, address disparities, inform education policies and teaching pedagogies in the country's evolving educational landscape. Incorporating the knowledge of the three presences would definitely be valuable in providing a clearer vision and understanding on the elements that would aid teaching and learning process during online classes (Rahmat et al., 2023).

Statement of Problem

Online learning has gained popularity in the past few years. This is largely due to the Covid 19 pandemic where instructors and students were forced to shift to online learning. The change of platform has changed the way lessons are conducted. By merely providing students with reading materials, tasks and conducting discussion, students could not get rich and meaningful lessons. (Husin et al., 2023). In addressing this issue, Garrison et al (2000) argue that three significant elements should be presented in an online learning namely social, cognitive and teaching presence. These presences are interdependable to create a successful online learning experience especially for students. The absence of any element could impact the students' learning in an online setting. Thus, at this point, it is believed that it would be beneficial to conduct a study to investigate students' perception on the existence of these three significant elements in an online learning setting. The findings of such study could be used to suggest practical and pedagogical implications towards students' learning in an online setting.

Objective of the Study and Research Questions
This study is done to explore perception of learners on their view on online learning strategies. Specifically, this study is done to answer the following questions;
●   How do learners view their cognitive presence in online learning?
●   How do learners perceive their teaching presence in online learning?
●   How do learners perceive their social presence in online learning?
●   Is there a relationship between all types of presence in online learning?

Literature Review
Advantages and Drawbacks of Online learning
Since the world is affected by Covid 19, many traditional classrooms are converted into online classes in a very short period of time. Ever since then, many institutions have adopted to continue their online classes due to its advantages and notably many institutions also chose to revert back to traditional classroom method or at least mixing both online and offline classes in their syllabus due to the drawbacks of online learning.

Some of the advantages of online learning is its convenience and flexibility (Curelaru, et al., 2022). It provides flexibility to the teacher in designing the class and its content. Apart from that it is also flexible in terms of conducting the class as it does not have any limitation on where, how, when the class is to be conducted. Thus, it also provides convenience to both the teachers and the students.

Other studies, on the other hand, stated that there are numerous disadvantages of online learning mainly are technical issues, such as internet connection and internet speed, loss of sense of belonging and the risk of low attention level (Dumford & Miller, 2018). Indeed it is imperative to have a solid infrastructure, such as a stable and fast internet connection, in order for the online classroom to be successful. This has been one of the main issues in conducting online classes especially in the rural area. Apart from that the level of focus and discipline required by the students in an online class is far greater than in an offline class as the students are sitting behind a computer in his or her comfort zone miles away from the teacher. This also has contributed to the risk of low level of attention.

Online Presence
In the context of an online classroom, online presence refers to the visibility, engagement, and participation of both students and instructors within the virtual learning environment. It encompasses how individuals establish and maintain their digital identity, interact with peers and instructors, and contribute to the overall learning community. The effectiveness of online learning can be measured through the Community of Inquiry Framework, introduced by Garrison et al (2000, 2001; as cited Stenbom, 2018).

The Community of Inquiry framework, which focuses on three crucial elements, namely cognitive presence, teaching presence, and social presence, may rationalise fundamental elements of online teaching and learning that will lead to effective courses (Shea et al., 2003; Arbaugh et al., 2008; Swan et al., 2009). Cognitive presence refers to the intellectual engagement and critical thinking skills exhibited by learners in an online learning environment. When students deliberately generate knowledge in a collaborative manner that is typical of a constructivist learning environment, cognitive presence is visible (Garrison et al., 2001; Nagel & Kotze, 2009). Teaching presence in online learning refers to the actions and interventions taken by instructors to design, facilitate, and support effective online learning experiences (Garrison et al., 2000; Garrison & Arbaugh, 2007; Fiock, 2020). It incorporates

instructional strategies, materials, and technologies used to guide learners through the learning process. Social presence in online learning refers to the extent to which participants in online learning environment perceive themselves and others as real, social beings. According to Lowenthal (2010, as cited in Fiock, 2020), social presence explains people's capacity to present themselves as 'real people' through a communication medium.

Past Studies on Drawbacks of Online Learning
Although online learning is ubiquitous nowadays, it is not without any drawbacks. Past studies have highlighted some of these drawbacks. Some of the drawbacks are lack of social presence (Syahputri et al., 2020) and lack of teacher presence (Kupczynski et al., 2010). These drawbacks might lower the effectiveness of online learning as well as creating a negative environment for students to learn.

A study by Syahputri et al (2020) revealed that lack of social presence may impact students negatively in an online learning environment. Using a questionnaire, the study elicited relevant information from 140 respondents. The questionnaire consisted of questions related to drawbacks faced by the respondents during online classes during the Covid 19 pandemic. Ninety-six respondents reported that they felt isolated as they could not see and interact with others. The feeling of isolation could lead to anxiety, loss of motivation and stress.

In another study, Kupczynski et al (2010) highlighted the issue of teacher presence in terms of meaningful feedback and communication. Data for this study was collected from 643 undergraduate students via an end-of-semester-compulsory survey. It was found that the students value the teacher's presence highly in an online learning environment. They believed that lack of a teacher's presence in the form of meaningful feedback and communication was responsible for the lack of success in online learning.

These two studies highlight the drawbacks of online learning. Although it is widely used nowadays, lack of social and teacher presence might hamper the initial goal of online learning and this could lead to other problems for both students and instructors.

Past Studies on Advantages of Online Learning
Online learning has experienced significant growth and recognition as a viable alternative to traditional classroom-based education. Many studies have been done to investigate the impacts of online learning. A study by Husin et al (2023) discussed advantages of online presence through online group work.

A study by Husin et al (2023) examined the relationship between all types of presences in online group work. 331 respondents who were chosen at random to participate in the survey, utilising a survey with a 5-point Likert scale that is based on (Aderibigbe, 2021). It is found out that the majority of respondents indicated that, as for the cognitive presence, they frequently believed that group work enables them to be able to share each other's thoughts and information. Regarding social presence, the majority of respondents concurred that there is an improved potential to collaborate with team members to finish a task collectively (Husin el al., 2023). Another advantage discussed in the study by Husin et al (2023) is about the presence of a teacher during online group work fosters greater comfort because the teacher's job is to monitor the discussions, provide a welcoming and encouraging environment for students to feel at ease while working, and offer the necessary feedback to help students learn better.

Next, a study by Abidin et al (2023) discussed the relationship between teaching, cognitive and social presence in online learning. The study's survey received responses from 100

individuals. It is found that the teaching presence, cognitive presence, and social presence were discovered to have a favourable effect on students' online learning experiences. Learners stated that when the teacher communicates clearly and extensively to make sure the students are well-aware of the course goals, course learning activities, and time frames, it creates a pleasant online learning experience (Abidin et al., 2023). This study also highlights how crucial social presence is to a satisfying online learning experience. Peer engagement improves collaborative learning, and students felt that a comfortable environment is crucial to creating the best conditions for online learning (Abidin et al., 2023).

These two studies emphasise the positive aspects of online education through the engagement of the three presences. The positive engagement of presences in online learning is believed to provide a conducive learning environment and meaningful learning process even though there is no physical interactions among the learners.

Conceptual Framework

Figure 1 below presents the conceptual framework of the study. This study is done based on the concept that learning is best done when learners are given tasks to maximise their cognitive abilities. According to Garison & Arbaugh (2007), activities that include triggering events, exploration, integration, and reaching resolutions help learners develop learner improve their cognitive capacity. According to Rahmat,et.al (2022), throughout the learning process, learners process the information in the best way to facilitate understanding. In the context of online learning, teacher presence is needed to help learners make sense of learning through activities planned by the teacher. Teachers need to ensure that the design and organisation of the lesson further facilitate maximum learning. In addition to that, social presence is needed so learners feel connected to their peers.
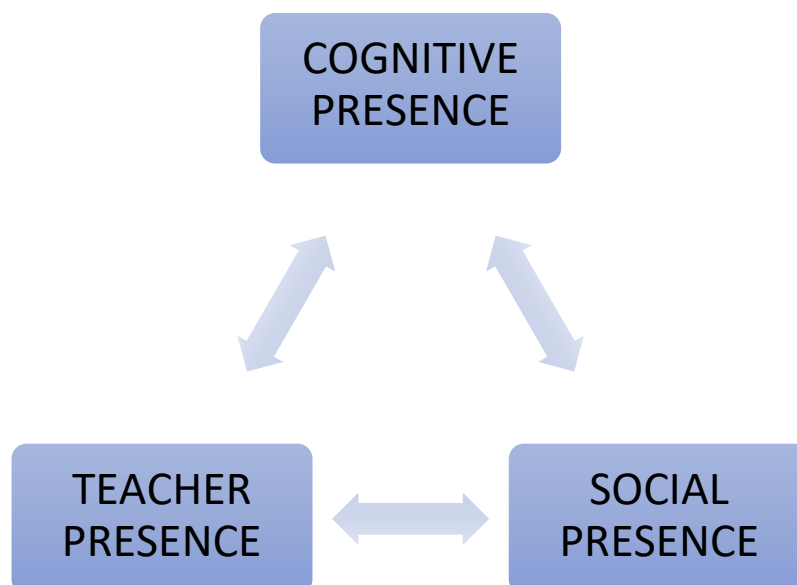
Figure 1- Conceptual Framework of the Study
Relationship of all types of presence in Online Learning

Methodology

This quantitative study is done to explore motivation factors for learning among undergraduates. A purposive sample of 169 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Garison & Arbaugh (2007) to

reveal the variables in table 1 below. The survey has 4 sections. Section A has items on demographic profile. Section B has 13 items teaching presence. Section C has 9 items on social presence. Section D has 12 items on cognitive presence.

Table 1

Distribution of Items in the Survey

SECTION	TYPE OF PRESENCE	NO OF ITEMS
B	Teaching	13
C	Social	9
D	Cognitive	12
		34

Table 2

Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.974	34

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .974, 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

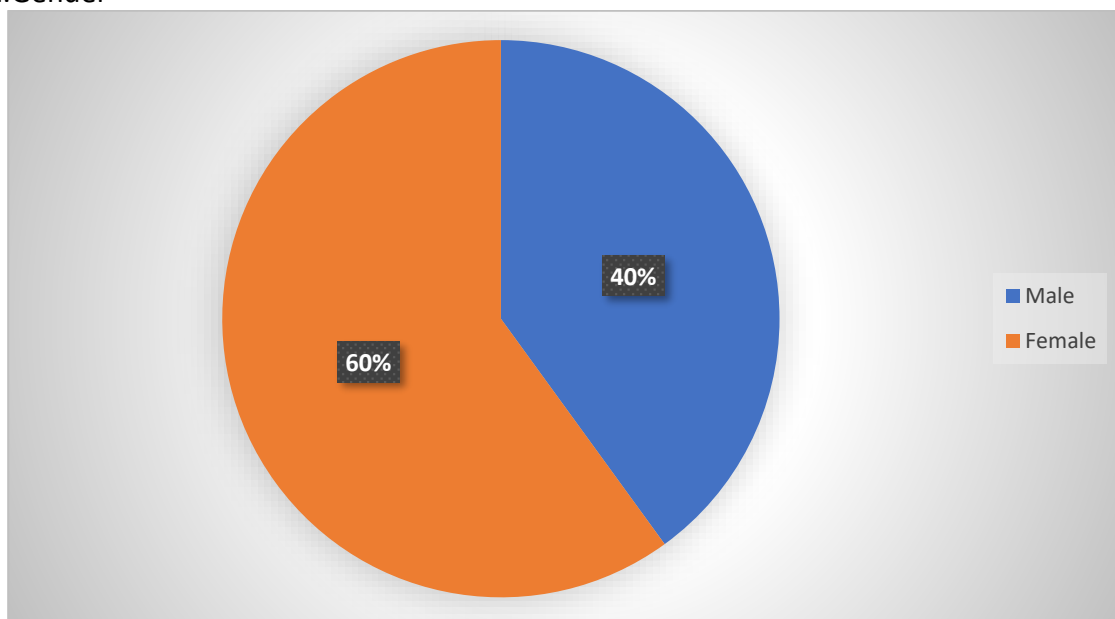Findings for Demographic Profile

Q1.Gender

Figure 2- Percentage for Gender

Figure 2 shows the percentage of gender of the respondents for this study. Female respondents represented the majority of the respondents with 60%. Another 40% of the respondents were made up by male respondents.
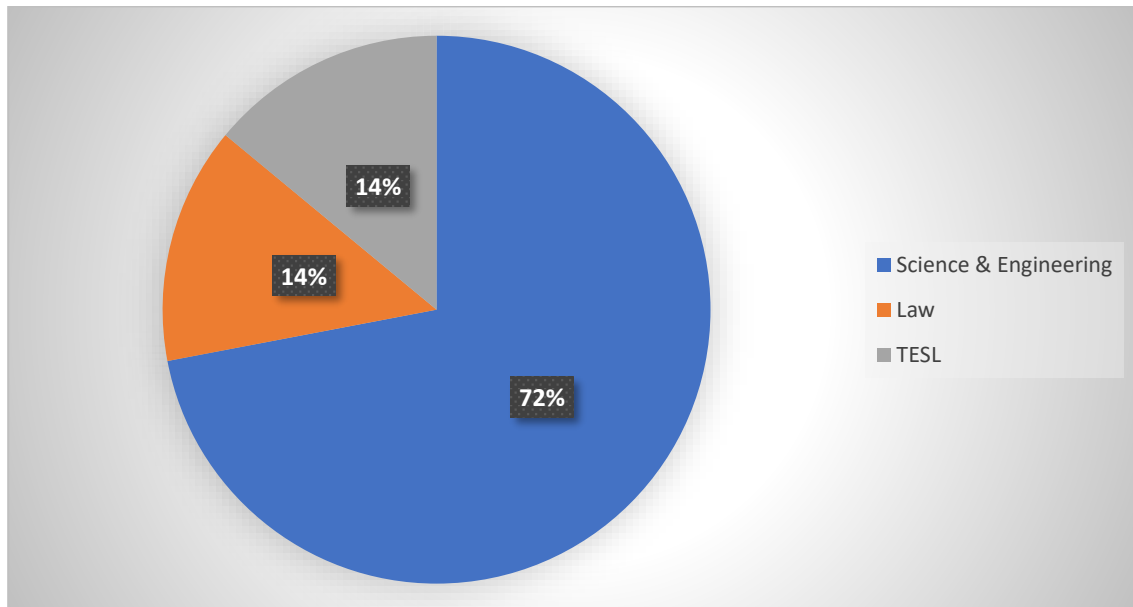
Q2.Foundation Course

Figure 3- Percentage Foundation Course

Overall, the respondents (refer to figure 3) came from three major courses namely science and engineering, Law and Teaching English as a Second Language (TESL). Most of the respondents belonged to the science and engineering course with 72%. Both Law and TESL courses had a similar percentage with 14%.

Findings for Cognitive Presence
This section presents data to answer research question 1- How do learners view their cognitive presence in online learning?
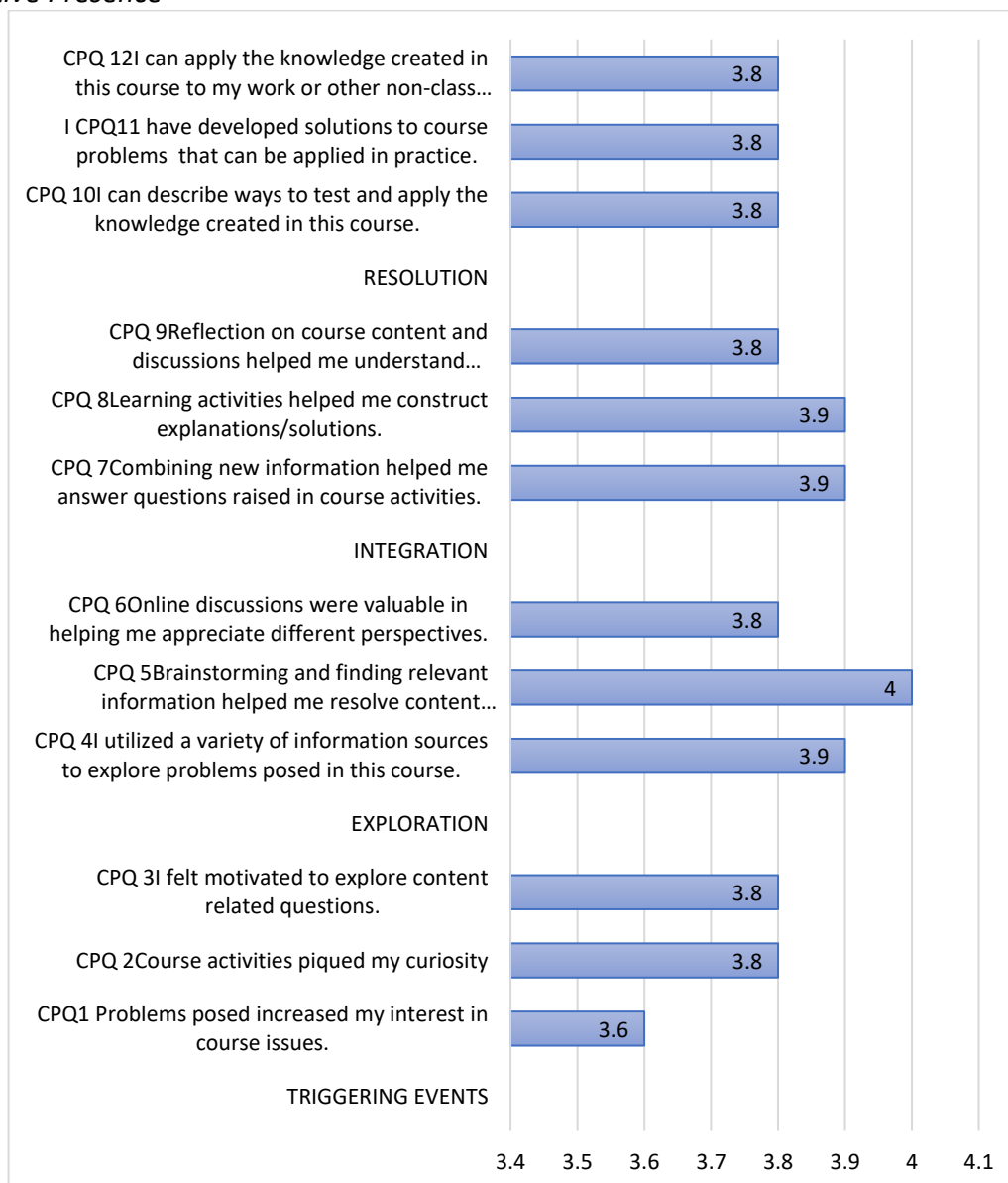
Cognitive Presence

Figure 4- Mean for Cognitive Presence

Majority of the respondents revealed that they frequently think about cognitive presence in online learning. The mean score of the items ranged from 3.6 to 4 which revealed that the respondents valued cognitive presence highly. As can be seen in figure 4, the highest mean belonged to item CPQ5 with the mean score of 4. This shows that the respondents appreciate the opportunity to brainstorm during online learning. The second highest mean score was 3.9 that belonged to item CPQ4,CPQ7, and CPQ8.

Findings for Teaching Presence
This section presents data to answer research question 2- How do learners perceive their teaching presence in online learning?
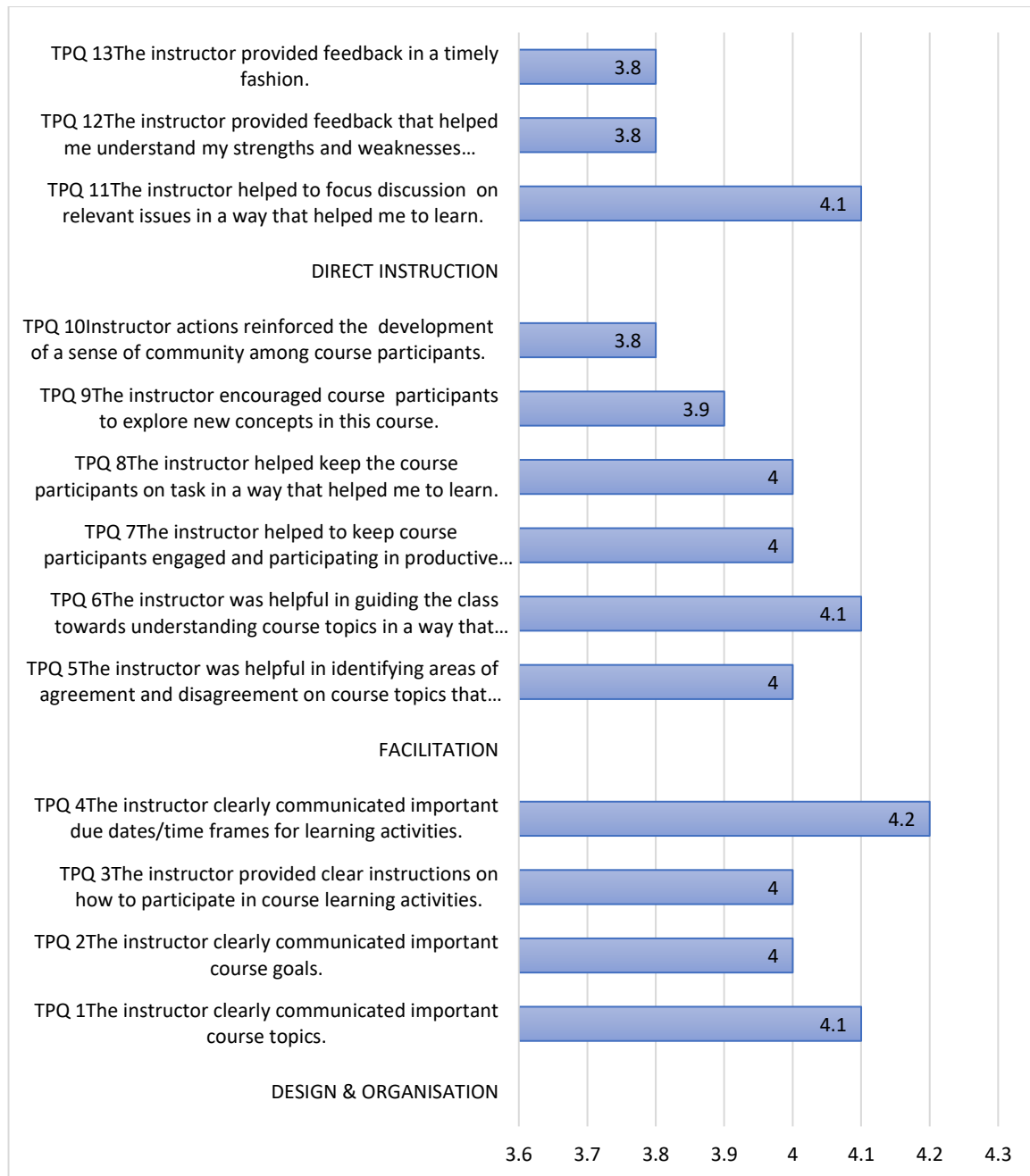
TEACHING PRESENCE

Figure 5- Mean for Teaching Presence

Results (refer to figure 5) indicate that the students also frequently think about teaching presence in online learning. The highest mean was 4.2 for item TPQ4 which is "the instructor clearly communicated important due dates/time frames for learning activities". This is followed closely by item TPQ1, TPQ6, and TPQ11 with the mean score of 4.1.

Findings for Social Presence
This section presents data to answer research question 3- How do learners perceive their social presence in online learning?
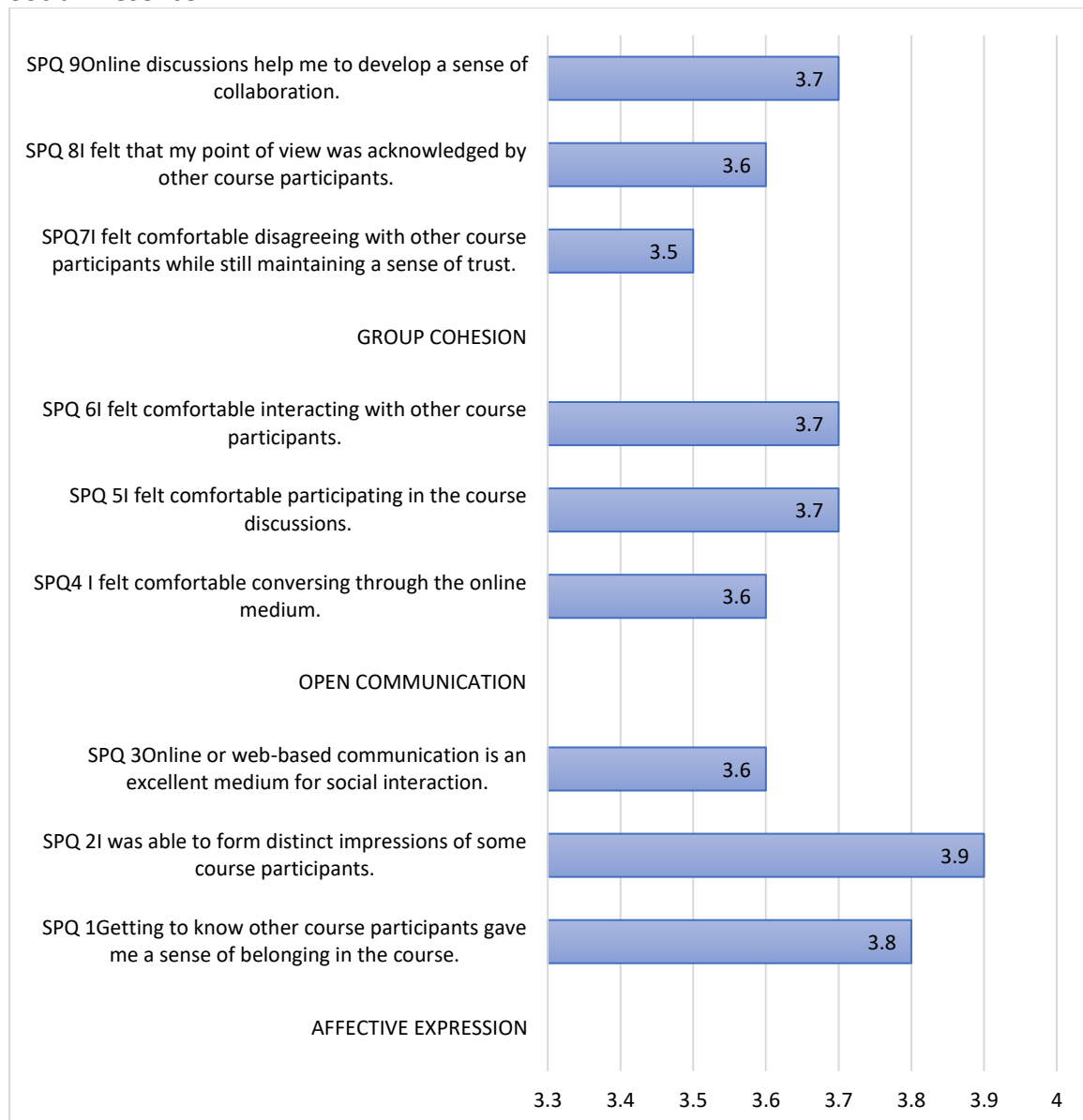
Social Presence

Figure 6- Mean for Social Presence

The last section in the questionnaire (refer to figure 6 was items on social presence. The analysis revealed that the mean scores ranged from 3.5 until 3.9. This goes to show that students always think about social presence in online learning. The highest mean score was 3.9 for creating distinct impressions of some course participants (SPQ2). The second highest mean was 3.8 where respondents reported that getting to know other course participants gave me a sense of belonging in the course (SPQ1). Overall, the results indicate that the respondents value social presence in online learning.

Findings for Relationship between
This section presents data to answer research question 4- Is there a relationship between all types of presence in online learning? To determine if there is a significant association in the

mean scores between cognitive , social and teacher presence, data is anlaysed using SPSS for correlations. Results are presented separately in table 3, 4, and 5 below.

Table 3

Correlation between Cognitive and Social Presence

Correlations

		COGNITIVE	SOCIAL
COGNITIVE	Pearson Correlation	1	.836**
	Sig. (2–tailed)		.000
	N	169	169
SOCIAL	Pearson Correlation	.836**	1
	Sig. (2–tailed)	.000	
	N	169	169

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

Table 3 shows there is an association between cognitive and social presence. Correlation analysis shows that there is a high significant association between cognitive and social presence (r=.836**) 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 strong positive relationship between cognitive and social presence.

Table 4

Correlation between Social and Teacher Presence

Correlations

		SOCIAL	TEACHER
SOCIAL	Pearson Correlation	1	.746**
	Sig. (2–tailed)		.000
	N	169	169
TEACHER	Pearson Correlation	.746**	1
	Sig. (2–tailed)	.000	
	N	169	169

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

Table 4 shows there is an association between social and teacher presence. Correlation analysis shows that there is a high significant association between social and teacher presence (r=.746**) 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 strong positive relationship between social and teacher presence.

Table 5
Correlation between Teacher and Cognitive Presence

Correlations

		TEACHER	COGNITIVE
TEACHER	Pearson Correlation	1	.787**
	Sig. (2-tailed)		.000
	N	169	169
COGNITIVE	Pearson Correlation	.787**	1
	Sig. (2-tailed)	.000	
	N	169	169

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

Table 5 shows there is an association between teacher and cognitive presence. Correlation analysis shows that there is a high significant association teacher and cognitive presence (r=.787**) 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 strong positive relationship between teacher and cognitive presence.

Conclusion

Summary of Findings and Discussions
The findings of this study revealed that cognitive, teacher, and social presences are significant elements in online learning. Thus, the findings are consistent with the findings of Husin et al (2023); Abidin et al (2023) when they revealed that the social, cognitive and teaching presences are overlapping elements that help to create a positive and meaningful online learning environment for students. Firstly, the students mentioned that brainstorming and finding relevant information helped them to resolve content related questions. As a result, it provides a positive learning experience to students. Secondly, the students valued teacher presence highly in an online learning environment. As mentioned by Kupczynski et al (2010), teacher presence is pivotal in creating a meaningful online learning experience for the students. Lack of it would be seen as a problem as students might feel isolated and stressed. Next, the results portrayed that the correlation between cognitive and social presence plays an integral role in guaranteeing the attainment of online learning. Through the findings, it is demonstrated that the students felt positive affective expression, open communication, and good cohesion among online class participants, thus may lead to the assurance of the effectiveness of online learning. This is supported by Abidin et al (2023) as peer interaction improves collaborative learning, and students felt that a comfortable environment is crucial to a successful online learning experience.

This study has demonstrated a favourable association between the three factors. In order to encourage effective learning through virtual, a positive online learning experience might therefore include a balance of teaching presence, cognitive presence, and social presence

Pedagogical Implications and Suggestions for Future Research
The findings revealed strong relationships between the three significant presences in online learning. Hence, a few pedagogical implications could be suggested. First, the findings could be a reference for instructors to plan online learning. Theoretically, instructors should be aware of the interconnectedness of the three presences in online learning. By being aware of these facts, instructors can formulate a meaningful and connected online learning experience for the students. In addition, students can use the findings to improve their overall experience and learning via online platforms. By being aware of the three presences, both students and instructors can ensure that online learning is beneficial and meaningful.

It is hoped that the findings of this study could be used as a starting point for a more in depth study on Community of Inquiry in an online learning environment. Future study may look into online learning at other levels such as the postgraduate level. It is also suggested that future research be conducted using online learning from different fields of studies such as social sciences and humanities. Lastly, an in-depth investigation could be conducted to gain better understanding on the three presences' effects towards students' perception and academic achievement.

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