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Exploring Types of Presence in Online Group Work: A Case Study

Eugenie Anyau[1], Afiqah Abd Aziz[2], Amir Lukman Abd Rahman[3], Azureen Abd Aziz[4], Fang Yi Xue[5], Noor Hanim Rahmat[6]

[1,2]Centre of Foundation Studies, Universiti Teknologi MARA, Cawangan Selangor, Kampus Dengkil, Dengkil 43800, Selangor, Malaysia, [3]Akademi Pengajian Bahasa, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia, [4,5]Faculty of Language and Liberal Arts, Inti International Universiti Persiaran Perdana BBN Putra Nilai, 71800 Nilai, Negeri Sembilan, [6]Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Johor, Kampus Pasir Gudang

Email: eugenie@uitm.edu.my, afiqahaziz@uitm.edu.my, amirlukman@uitm.edu.my, azureen.abdaziz@newinti.edu.my, yixue.fang@newinti.edu.my, noorh763@uitm.edu.my

Corresponding Author Email: afiqahaziz@uitm.edu.my

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Abstract

The issue of group work online has been discussed in the education field since COVID-19 pandemic which has made Malaysia to switch from face-to-face classes to online distance learning. Students had to still fulfil the requirements for all courses by individual and group assessments. With the shift towards online environments, understanding the nature of individuals' engagement and presence within virtual group settings becomes crucial. The objective of this study is to discover perception of learners on their use of learning strategies specifically social presence, cognitive presence, and teaching presence in online group work. To achieve this objective, a quantitative survey was conducted with 200 undergraduate respondents from a public institution. The survey consisted of four sections: Section A captured the demographic profile of the participants, while Section B focused on social presence, Section C, and D looked at cognitive presence, and teaching presence, respectively. A general overview of the findings reveals a significantly strong relationship between the presence of cognitive, social, and teaching elements during online group work. The impactful roles played by these three types of presence in online group work are highlighted by the statistical analysis of the questionnaire data. A collective agreement among most students indicates that the presence of cognitive, social, and teaching elements positively contributes to their learning experience in online group work. These insights emphasize the importance of understanding these core elements for educators, researchers, and students, as they can enhance the productivity and quality of online group work.

Keywords: Online Group Work, Social Presence, Cognitive Presence, Teaching Presence

Introduction

Background of Study

A crisis has compelled a society to adapt and change in unexpected ways. During the pandemic Covid-19 in 2020, the entire global activity was disrupted and went through massive transformation in the social and economic sectors (Krishnamurthy, 2020). When a crisis strikes, this demonstrates that society is dynamic and adaptable.

The education sector has seen a massive shift from traditional classrooms to online learning (Mishra et al., 2020). Plus, the entire evolution of higher education institutions has impacted 185 countries, where all higher education institutions have been forced to close and all teaching and learning activities have been transformed to an online platform.

In the aftermath of the Covid-19 pandemic, the entire education sector has embraced the technological challenge. The digital transformation had an impact on both teachers and students. Most of the research has focused on technological innovation, competence pedagogy, and emotional education as well as the importance of educators in implementing ICT in the classroom (Avidov-Ungar, 2018), but the perception of the learners, particularly their social, cognitive, and teaching presence, is critical to promoting an effective learning outcome. Despite numerous studies on distance learning quality, satisfaction, and success, limited research was conducted on measuring distance learning acceptance while taking learning activities and lecturer professionalism in the higher education institution (Mohd Salleh et al., 2023). As a result, the current study considers the perception of learners based on learning strategies, in this case, online group work.

Group work is essential in student learning because it enhances the learning experience through active discussions and collaborative intellectual activities. Instructors' presence is also necessary to facilitate collaborative discussions among students (Aderibigbe, 2021). Furthermore, it is critical to create a safe, open, and flexible learning environment to support students' collaborative learning. To ensure cognitive presence, students must be able to be given enough time in the learning process to critically analyse questions, reflect on their reading, and relate to their personal experience. This will pique their interest and inspire them to come up with new ways to solve problems. Students who are engaged in the learning process will eventually transition into social presence because it is in their best interests to participate in cognitive activities. Being present in a group work will encourage active discussions, experience sharing, and collaboration with their colleagues. To ensure that students can express themselves freely without intimidating others, rules and regulations must be established and communicated to students in advance. To improve teaching presence, three components are important which are instructional design and organization, facilitating discourse and direct instruction in the discussion. These three core elements are essential in group work to create a meaningful educational experience.

Statement of Problem

Online learning is a new spectacle in learning methods. The face -to -face learning method was learnt to be quite challenging to implement due to the spread of pandemic covid 19 worldwide. Numerous studies have been conducted on the effectiveness of online learning in terms of its success and challenges. The success of online learning has been a topic of extensive research and evaluation in recent years. In recent decades, student engagement has emerged as a fruitful framework for understanding the efficacy of students' educational

experiences in college (McCormick et al., 2013). Besides, that general causal model of college environmental effects, the student engagement perspective builds on decades of research findings about activities, experiences, and environmental features related to desired learning outcomes (McCormick et al., 2013).

The problem to be addressed through this study is lack of social presence. One problem in online group work is the diminished sense of social presence among participants. This refers to the feeling of connection and awareness of others' presence in a virtual environment. Participants may struggle to establish rapport, build trust, and engage in meaningful interactions, leading to decreased collaboration and suboptimal outcomes. Chatterjee and Kar (2020) stated that several factors that influence the use of social media marketing include conditions of facilities, costs, compatibility, technology related to using, and ease-of-use. Another problem that could be emphasized in this study is limited cognitive presence. Cognitive presence is the extent to which learners can construct meaning through sustained communication. Moreover, cognitive presence is the key element in critical thinking, a necessary element for higher levels of thinking and learning. Due to technological barriers, participants may find it difficult to engage in reflective and analytical discussions, hindering their ability to explore complex ideas and develop deep understanding. According to Hu et al (2020) automated cognitive classifiers represent the subjective and diverse traits of cognitive presence that occur, rather than use-imposed levels of categorization. Thus, engagement as a group is very important to achieve an effective discussion.

The teaching presence is the final issue addressed in this study. According to Panisoara et al (2020), it was suggested that factors such as self-knowledge, awareness of teachers' negative emotional reactions to technology use (such as burnout and technostress), and self-assessment of the efficacy of online teaching could potentially indicate the likelihood of continued usage of online teaching. All participants in the study pointed out that their language learning motivation depended highly on teacher-related factors, which in turn resulted in lower or higher extrinsic motivation. Teaching methods, lesson presentation, feedback and interaction with teachers were the issues mentioned by the participants. It was stated that the instructions and feedback by the teachers were not adequate sometimes, which led to lower motivation for attendance.

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 perceive social presence in online group work?
- How do learners perceive cognitive presence in online group work?
- How do learners perceive teaching presence in online group work?
- Is there a relationship between all types of presence in online group work?

Literature Review

Drawbacks of online group work

Online group work has become a common practice among students in higher learning institutions, particularly for doing discussions, group assignments and collaborative activities. With the rapid development of technology, students are utilising online platforms such as Discord, Google Meet, Zoom, WebEx and Microsoft Teams to engage in online group work, especially during the COVID-19 pandemic and post COVID-19 pandemic, which have necessitated the implementation of online learning during lockdown periods. However,

online group work presents challenger not only for students but also for educators. Kalman et al (2020) highlighted that there are two external barriers that can negatively affect online group work: distraction from family members and social isolation. For students who comes from large families, they will face difficulties in finding a quiet environment to focus on their work or has family obligations when their family members are at home which resulted in lower prioritisation towards online group work. A study by Clement (2016) showed that minority students are particularly affected by such challenges which can influence their academic success, hamper proper time management with family obligations and academic obligations, and lead to increased stress due to competition with their peers. Furthermore, during the transition to online learning, students often find themselves relying more on self-motivation to navigate the new learning landscape. While many students can adapt, some students experienced major social isolation which resulted to the loss of motivation in their studies. Kalman et al (2020) explain that social isolation in online group work is attributed to the lack of physical interaction with classmates and lecturers or teachers, as well as technological limitations. Online learning has contributed to meaningful physical interaction with classmates and educators without switching on their cameras, engaging in distractions such as browsing social media or other activities in their surroundings. Students do not really know who their fellow peers are and the lack of emotional connection and unfamiliarity with their peers can attribute to procrastination and social isolation (Anam & Hitipeuw, 2022). Additionally, Kalman et al (2020) also suggested that technology limitations such as incompatible devices, inability to connect with video and audio, and instability Wi-Fi connection also contributed to social isolation. Ferri et al (2020) elaborated that lack of understanding and technological limitations only contributed to loss of interest or motivation in learning especially among students from lower socioeconomic background. Students need to put on more effort in order to succeed and actively participate in online group work without being hindered by technological limitations. In some cases, students may need to rely on their personal savings, seek part-time employment, or borrow devices from others, which can further disrupt their own learning experience and the experiences of others, leading to a decline in social and cognitive presence, ultimately resulting in poorer quality education.

Advantages of Online Group work

The COVID-19 pandemic has significantly transformed the teaching and learning landscape in higher education institutions. In the post COVID-19 pandemic era, most institutions have adopted either a fully face-to-face learning or hybrid learning approaches. Hybrid learning is a combination of both offline and online approach in teaching and learning to effectively utilise technology in the instructional process. In hybrid learning environments, most students engage in more online group work to complete exercises, participate in discussions, and collaborate on assignments, regardless of their connectivity or circumstances. Abidin et al (2023) explain that online learning has led to the increasing popularity of online group work, as students can leverage various available platforms that facilitate interaction and create an ideal learning environment. Moreover, online group work provides students with a realistic setting to develop their cognitive presence, enabling them to construct meaning and comprehend course content from the comfort of their homes, alongside their peers (Singh et al., 2022). Online group work offers the advantage of active participation in group discussions without feeling embarrassed, as students can easily refer to teaching materials and have the freedom to choose whether to enable or disable their camera or video. This flexibility caters to both extroverted and introverted students. Kalman et al (2020) further highlight that some

students become more engaged in online group work with their peers due to the online format, which simulates a classroom experience, enhancing their attention span and enjoyment of subjects or classes. Online group work encourages students to tackle complex problems collaboratively, leveraging the diverse knowledge and skills of each member in the group. Consequently, online group work enhances the quality of education by leveraging the strengths and weaknesses of each student, leading to a wide range of perspectives and insights that enrich the learning experience.

Past Studies on Online Group Work

One factor that is frequently examined is the development of community and peer interaction in a traditional classroom setting compared to an online learning environment. A study conducted by Rovai et al. (2005) identified that students' high levels of persistence and learning satisfaction can be used to explain both high persistence and learning satisfaction This leads one to believe that the lower persistence rates of online courses are brought on by a lack of community and social connectedness in an online learning environment. The "no significant difference" phenomenon which was established by Thomas Russell resulted that the method of delivery, such as technology versus in-person classroom settings did not affect the results of learning. According to proponents of online learning, learning is influenced by the instructional strategy used within the delivery medium. Thus, learning outcomes are influenced by the quality of instruction (Rovai et al., 2005). Online learning has the capacity to break down barriers that have restricted individuals from an equitable education in the past. In order 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). In education, an estimated one in ten students has some form of disability. A study revealed that in 2007-2008, 11 percent of undergraduates and 8 percent of graduate students reported having some form of disability. Online learning serves as the sole avenue through which certain students can access courses and course materials independently, underscoring the imperative for inclusive and accessible online distance education (Oswal & Meloncon, 2014).

In addition, Oswal and Meloncon reported on two studies conducted in 2010 by the Conference on College Composition and Communication (CCCC) Committee for Best Practice in Online Writing Instruction (OWI). One study focused on instructors who taught fully online courses, while the second study looked at instructors who taught hybrid courses. The data highlighted a discrepancy in accessibility and students with disabilities enrolment in the instructors' courses. The report revealed that 54 percent of instructors stated that their course was not accessible. Another issue that was exposed was the common theme among instructors where 20 percent was the belief that the issue of accommodating students with disabilities was not their responsibility. Instructors admitted that they lacked knowledge, experience, and resources to meet the identified needs of the students. One instructor voiced their concerns on the lack of resources, time, and personnel to adequately accommodate students with identified needs by stating that it is tough to design an online course as to design for accessibility adds another layer of design for which we have not been trained. The challenge is access to resources to make the courses of Americans with Disabilties Act Standards for Accessible Design (ADA) compliant and time and personnel who can help with such issues (Oswal & Meloncon, 2014). Besides, a professor also expressed their concerns regarding online pedagogy by conveying that he found himself deeply disconcerted when contemplating the utilization of online education for these students. Regrettably, their

current framework lacks the requisite scaffolding mechanisms tailored to cater to their specific needs. Another professor revealed their apprehension in regards to online instruction by stating that he does not have the appropriate scaffolding in place for these folds (Oswal & Meloncon, 2014). In order to create democratic online teaching environments, accessibility needs to be at the forefront of course creation. Oswal and Meloncon (2014) emphasized the criticality of meticulous design in distance education options to foster inclusive learning opportunities for all individuals, as poor design erects barriers to equal participation in academics and careers. The impact of accessibility on student engagement and academic performance is profound, thus significantly influencing the overall success of the learner.

Conceptual Framework

Figure 1 shows the conceptual framework of the study. This study explores the influence of different type of presence on online group work. According to Rahmat (2020), group work (be it face-to-face or online) encourages collaborative communication, promotes critical thinking skills. Even in the online environment, the social presence of group work is felt through interactions. According to Aderibigbe (2021), online group work activities provide social, cognitive, and teaching presence to the participants. This study investigates if there is a relationship across all types of presence group work.

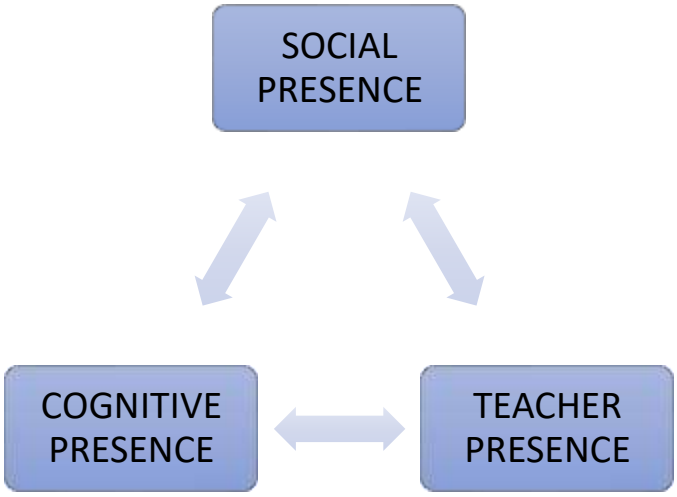

Figure 1- Conceptual Framework of the Study- Type of Presence in Online Group Work

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 8 items on social presence. Section C has 7 items on cognitive 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	SOCIAL PRESENCE	8
C	COGNITIVE PRESENCE	7
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

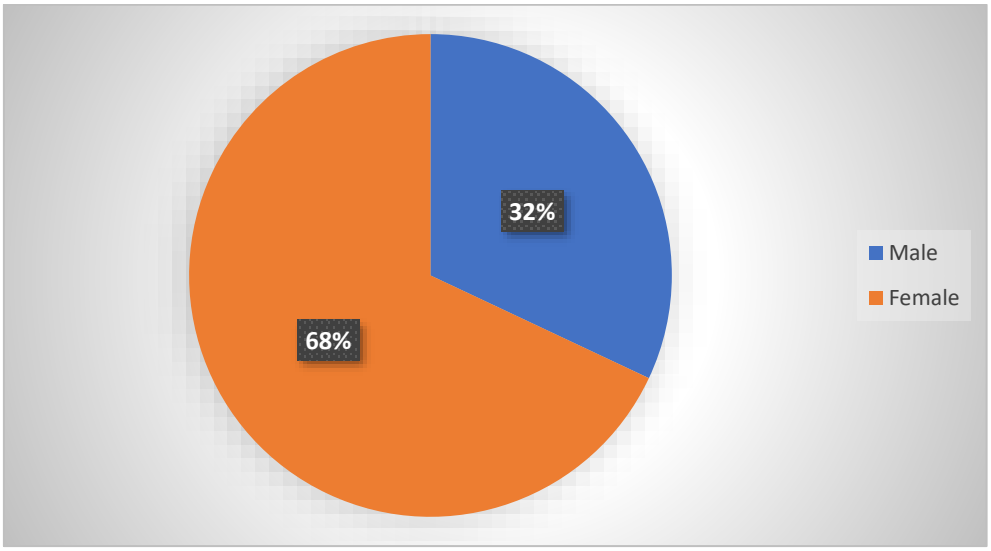

Figure 2- Percentage for Gender

Figure 2 shows the percentage of gender. Data from the survey shows that 32% are male and 68% of the respondents are female.

Q2 Discipline/Cluster

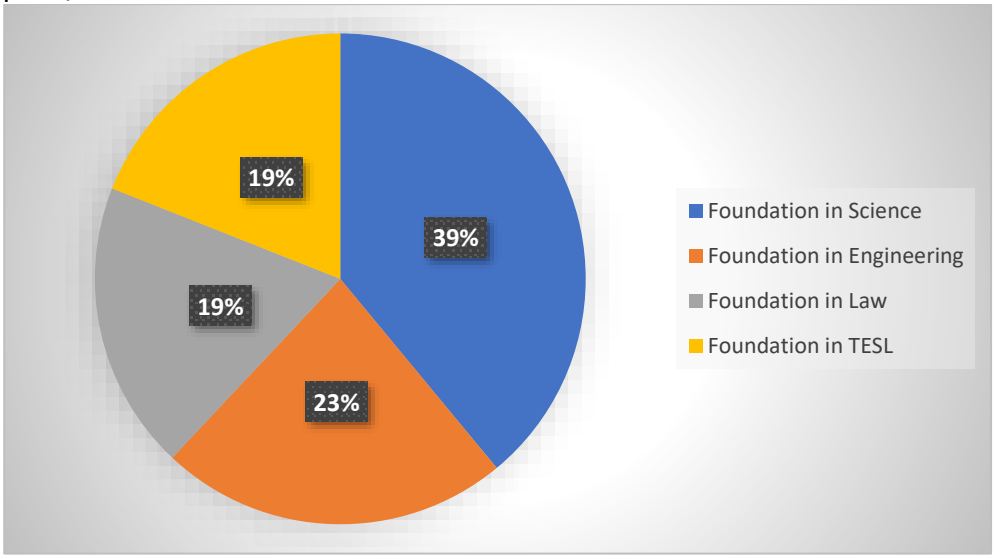

Figure 3- Percentage for Discipline

Figure 3 shows the percentage of discipline. Data revealed that 39% of the respondents were from Foundation in Science, 23% were students from Foundation in Engineering. Both Foundation in Law and Foundation in TESL share the same percentage which is 19%.

Q3 Strength of Wi-Fi

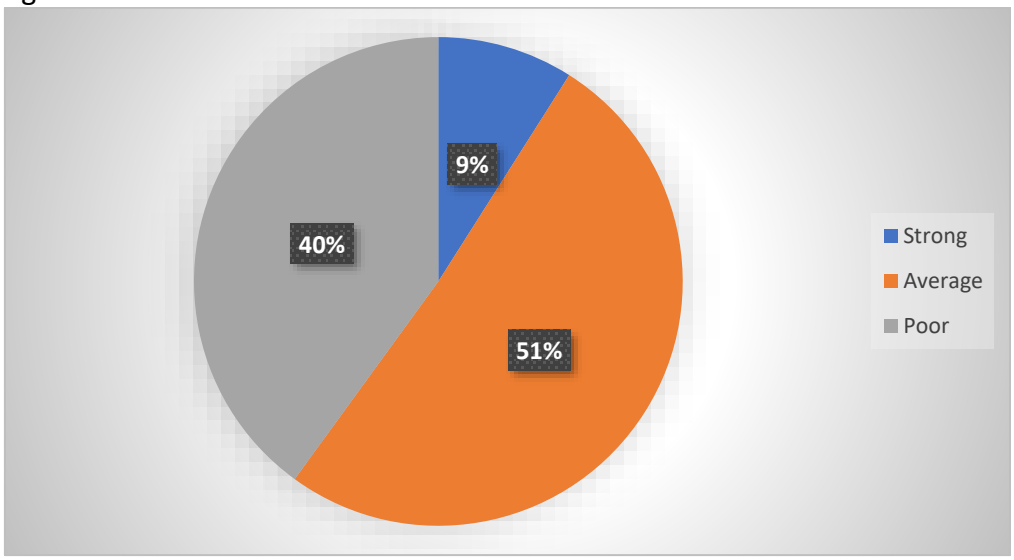

Figure 4- Percentage for Strength of Wi-Fi

Figure 4 shows the percentage for strength of Wi-Fi. There are only 9% of the respondents who have a strong internet connection. 51% of the respondents have an average connection and 40% have a poor Wi-Fi connection.

Q4 Online Learning Experience

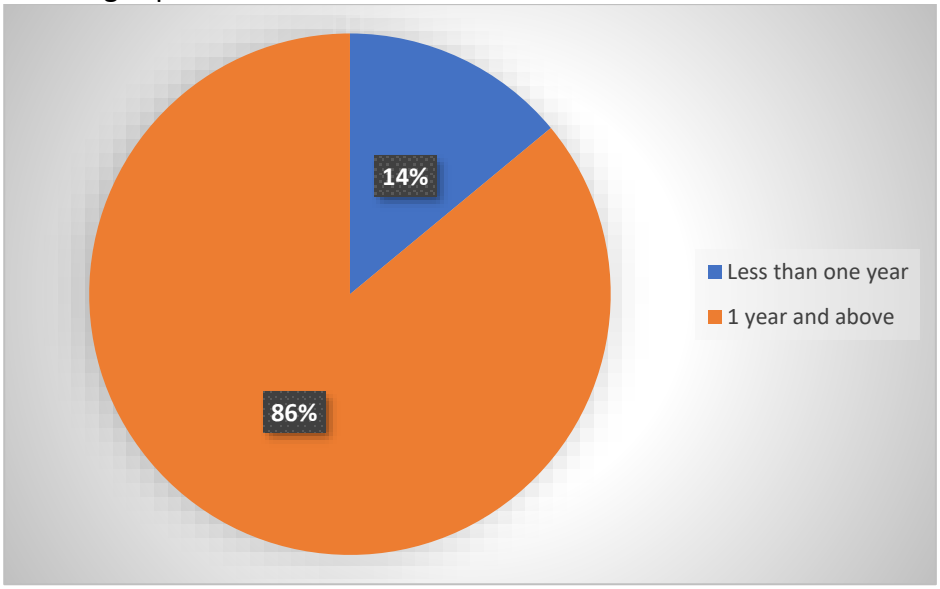

Figure 5- Percentage for Online Learning Experience

Figure 5 shows the percentage for online learning experience. As can be seen, 14% of the respondents have less than one year experience. Meanwhile 86% have 1 year and above on online learning experience.

Findings for Social Presence

This section presents data to answer research question 1- How do learners perceive social presence in online group work?

(Social presence)

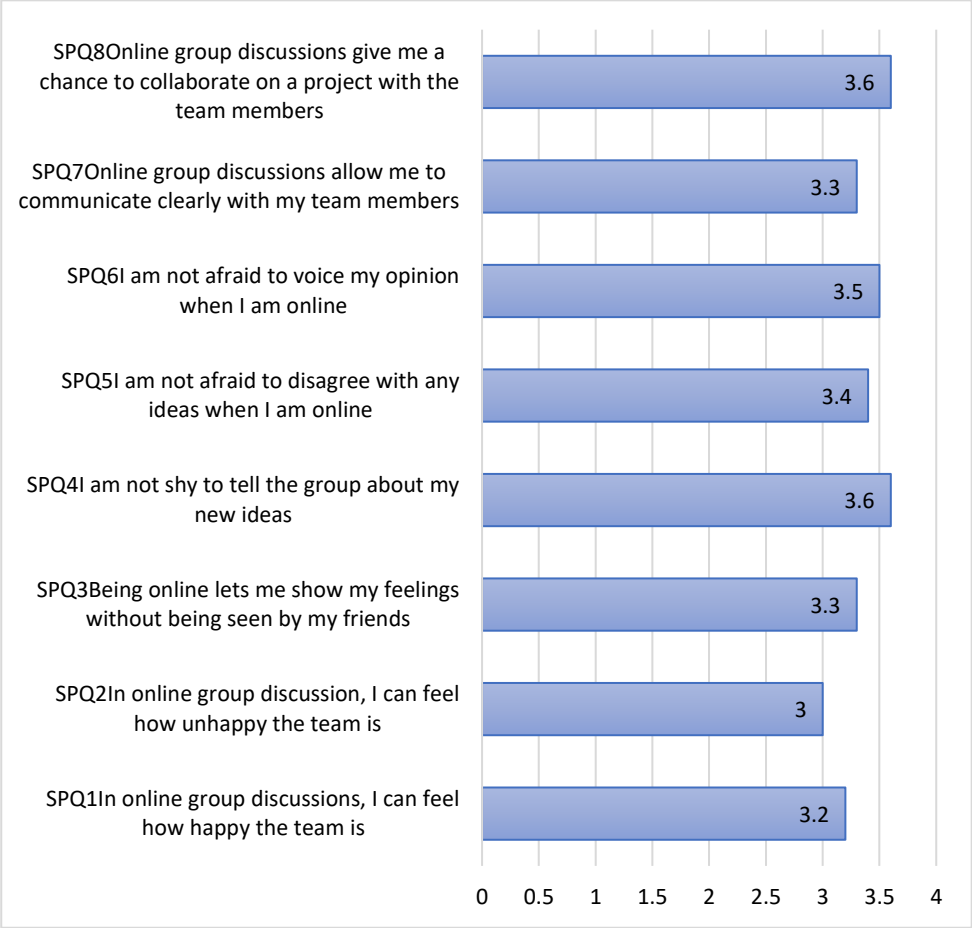

Figure 6- Mean for Social Presence

Figure 6 above presents the mean scores for social presence. Two items share the highest mean of 3.6 and they are “SPQ4 I am not shy to tell the group about my new ideas” and “SPQ8 Online group discussions give me a chance to collaborate on a project with the team members”. This is followed by the mean of 3.5 for the item “SPQ6I am not afraid to voice my opinion when I am online”. The lowest mean of 3 is reported for the item “SPQ2In online group discussion, I can feel how unhappy the team is”.

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)

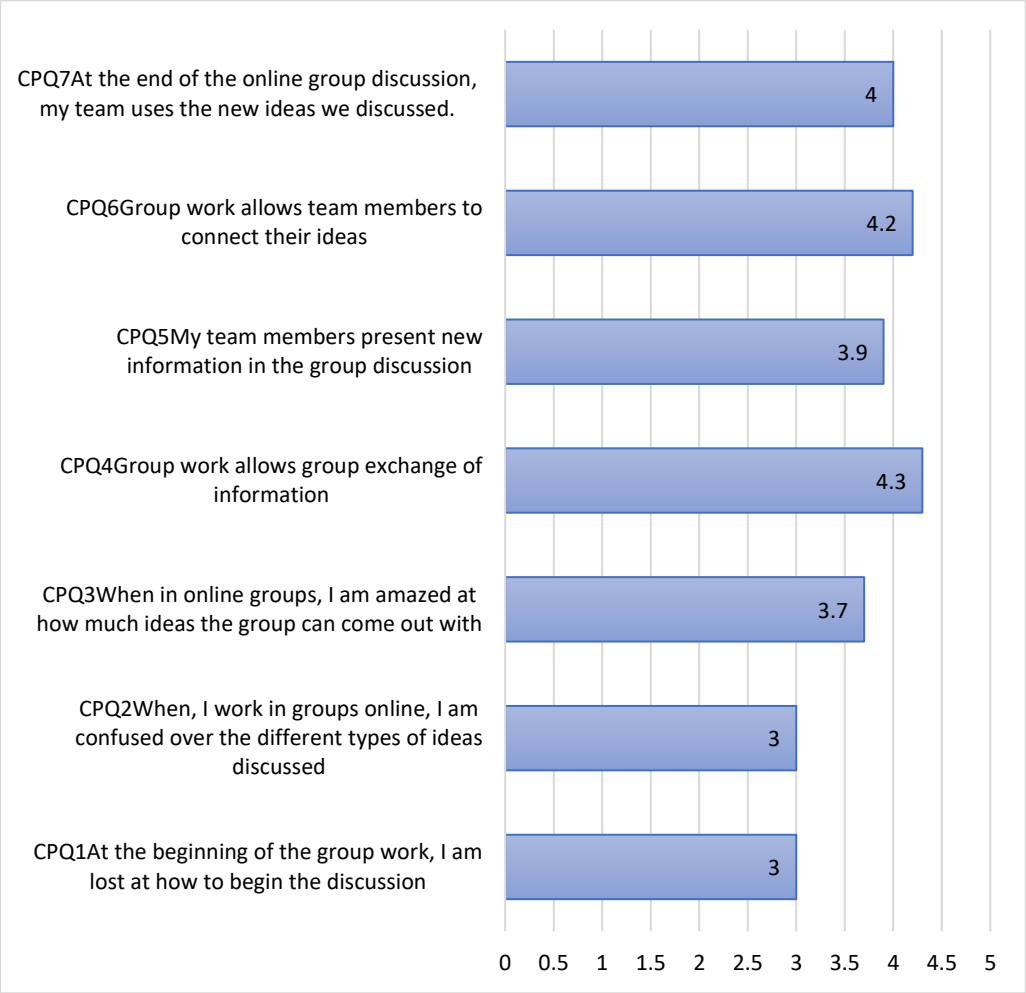

Figure 7- Mean for Cognitive Presence

Figure 7 shows the mean scores for cognitive presence. One item has the highest mean score of 4.3 which is "CPQ4Group work allows group exchange of information". This is followed by the mean score of 4.2 for one item which is "CPQ6Group work allows team members to connect their ideas". Two items shared the lowest mean score of 3 which are "CPQ1At the beginning of the group work, I am lost at how to begin the discussion" and "CPQ2When I work in groups online, I am confused over the different types of ideas discussed".

Findings for Teaching Presence

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

(Teaching Presence)

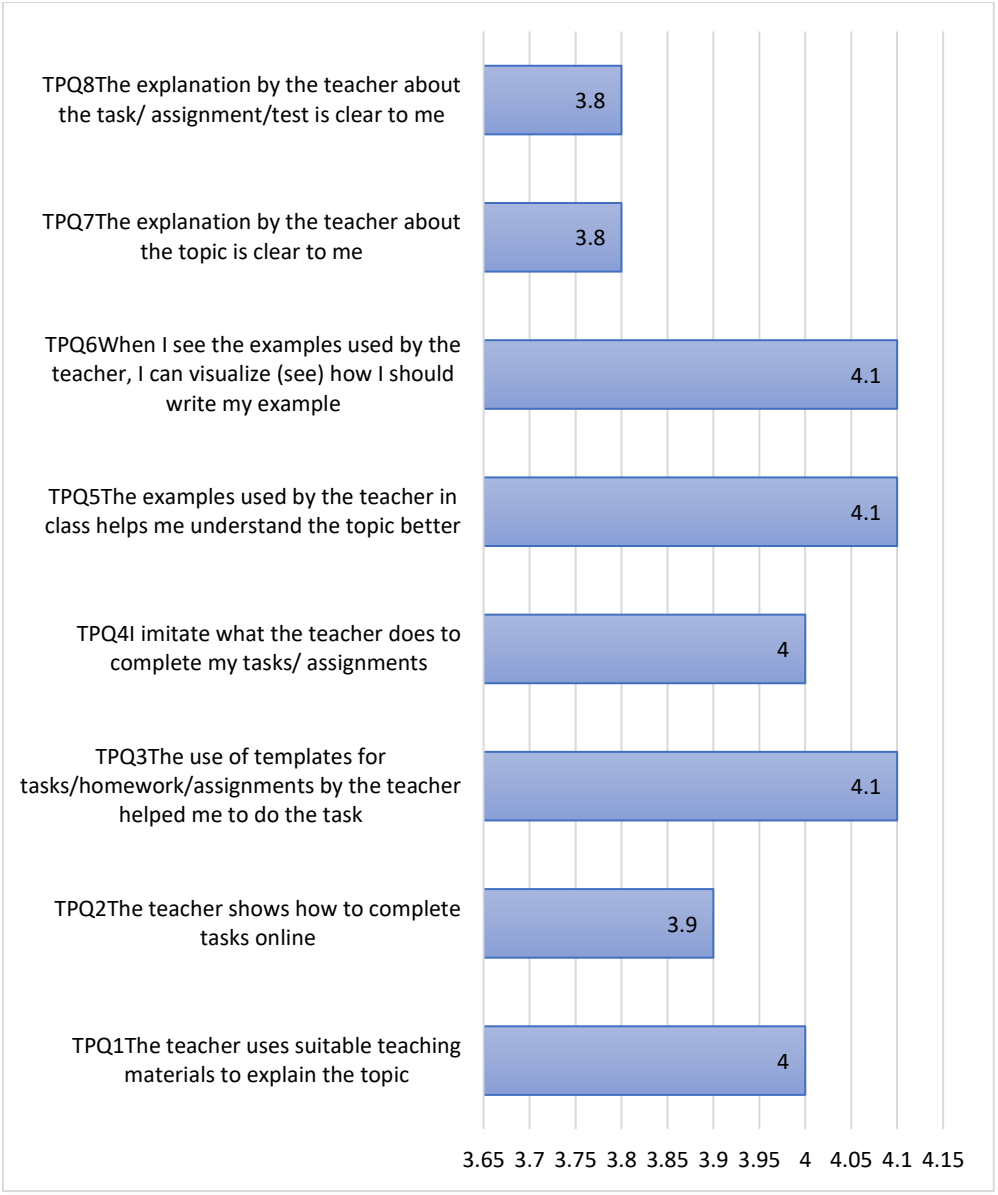

Figure 8- Mean for Teaching Presence

Figure 8 presents the mean scores for teaching presence. Three items shared the highest mean score of 4.1 which are "TPQ3The use of templates for tasks/homework/assignments by the teacher helped me to do the task", "TPQ5The examples used by the teacher in class helps me understand the topic better" and "TPQ6When I see the examples used by the teacher, I can visualize (see) how I should write my example". This is followed by the mean score of 4 for two items which are "TPQ1The teacher uses suitable teaching materials to explain the topic" and "TPQ4I imitate what the teacher does to complete my tasks/ assignments". Two items shared the lowest mean score of 3.8 which are "TPQ7The explanation by the teacher about the topic is clear to me" and "TPQ8The explanation by the teacher about the task/ assignment/test is clear to me".

Findings for Relationship between all types of presence in online group work

This section presents data to answer research question 4Is there a relationship between all types of presence in online group work? To determine if there is a significant association in

the mean scores between social, cognitive, and teaching presence, data is analysed using SPSS for correlations. Results are presented separately in table 3, 4, 5 and 6 below.

Table 3
Correlation between Social and Teaching Presence

Correlations

		SOCIAL	TEACHING
SOCIAL	Pearson Correlation	1	.426**
	Sig. (2-tailed)		.000
	N	200	200
TEACHING	Pearson Correlation	.426**	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 social and teaching presence. Correlation analysis shows that there is a moderate significant association between social and teaching 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 social and teaching presence.

Table 4
Correlation 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 4 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 5
Correlation 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 results obtained from this study demonstrate that social presence, cognitive presence, and teaching presence are fundamental components essential for effective online group work. In terms of social presence, a significant majority of respondents expressed their willingness to openly share new ideas within the group, indicating that online group discussions provide them with valuable opportunities to engage in collaborative project work with their team members. This proves that social presence positively affects learners' engagement, interaction, and overall learning outcomes in online group work (Kilis & Yıldırım, 2019). Regarding cognitive presence, most respondents perceive group work as a means for team members to establish connections between their ideas. Fostering cognitive presence in online group work is crucial for facilitating meaningful learning, enhancing overall outcomes, and achieving higher levels of participant satisfaction and engagement (Almasi & Zu, 2020). Regarding teaching presence, a significant majority of respondents reported that the utilization of assignment templates by teachers significantly aided their task completion process, while the incorporation of relevant examples during class sessions enhanced their understanding of the topic and provided a visual guide for crafting their own examples. This

revealed that there is a significant positive relationship between teaching presence and student achievement, indicating that effective instructional support and guidance contribute to improved learning outcomes in online group work (Parish et al., 2021). It can be concluded that in online group work, a significantly moderate positive relationship is observed among all three presences, namely social, cognitive, and teaching. The synergy between these presences enhances individualized learning, and boosts student motivation. Moreover, this research not only contributes to addressing student challenges in online group work but also enhances the likelihood of further developing the three presences in future endeavours. In addition, the results can also aid academicians and students in enhancing the effectiveness of online group work within instructional sessions. Given these considerations, it is highly advisable for students and academicians to prioritize these three elements as essential factors while participating in online group work. Doing so holds the promise of generating enhanced results and heightened productivity in educational endeavours.

Conclusively, this study has made a significant theoretical and contextual contribution to the field of online collaboration. The theoretical contribution of this study is found in its formulation of the different types of presence, offering a thorough framework for both researchers and educators to gain a deeper understanding of the dynamics of online group collaboration. Contextually, this study also carries great importance in the era of rapidly progressing digital technologies and the growing importance of virtual collaborations. As more people rely on internet platform for group work and collaboration, comprehending the various types of presence becomes crucial for enabling efficient communication, and exchange of information. The knowledge acquired from this study can guide the development of virtual learning platforms, and online collaboration software, ultimately enhancing the overall standard of online group engagements.

Pedagogical Implications and Suggestions for Future Research

The implications stemming from the summary of findings, which focus on the exploration of presence types in online group work, provide valuable insights for academicians and students at large, surpassing the researcher's initial expectations. Future researchers are recommended to focus on identifying any other rational presence in order to enhance online group work, considering the moderate association revealed by the findings. Besides, the findings of this study are anticipated to inspire further research on the potential existence of additional presences beyond social, cognitive, and teaching presence. Additionally, conducting a comparative analysis would facilitate the identification of the most effective presence in online group work. Furthermore, considering the utilization of a small sample size in this study, it is strongly recommended for future researchers to enhance the scale by increasing the number of respondents and incorporating a wider range of faculty options. Lastly, future researchers should consider revising the adapted questionnaires from past research to align with their own specific research questions, as modifying or omitting certain questions in the questionnaire may lead to more reliable findings.

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