

Exploring Online Group Work Through the Social Cognitive Theory

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Abstract

Group work is very common in higher education. Group work or also known as collaborative learning can be defined as a group of people who work together and go through a process of working to accomplish a similar goal together (Laal & Laal, 2012). The abrupt transition to online learning, however, has propelled many instructors to incorporate online group work in their classes as group work enhances learning. This quantitative study is done to explore online group work using Social Cognitive Theory among undergraduates. The study was conducted on a purposive sample through a survey. Data was collected using a 5 Likert-scale survey and is rooted from Bandura (2001); Aderibigbe (2021) which consist of 4 sections: demographic profile, personal, behaviour and teaching presence. Collected data were analysed by SPSS software. The study found that online group work is beneficial in many ways as it allows learners to communicate their ideas and gain better understanding about their learning.

Keywords: Group work, Online Group work, Online Collaborative Learning, Collaborative Learning, Group Interaction

Introduction

Background of Study

The advancement of digital technologies, widespread internet access, and the growing demand for remote collaboration have contributed to the rise in the popularity of online

instructions especially in educational settings (Lemay and Doleck, 2021). The rapid move from face-to face to online instruction can also affect the student's engagement in learning. Online learning can leave students feeling lonely, disengaged, and unmotivated due to not attending classes in person on campus, they also can lack a sense of belonging and do not readily identify with their university. They do not have a real opportunity to become acquainted with classmates and form friendships. Therefore, incorporating group work or activities into online learning can help to increase engagement and a sense of belonging as well as enhances learning. According to Chinowsky and Rojas (2003), online group work refers to the students working together as a small group, executing simultaneous, collaborative work processes through electronic media without regard to geographic location. In addition, Koh and Hill (2009) stated that online group work involves participating in a discussion board to work in small groups as part of the learning process.

When working in a group, students get the opportunities to interact with classmates via discussion boards and connection with professors and teaching assistants via tutorials which are particularly helpful (Farrell & Brunton, 2020; Swan, 2002). Therefore, with the shift to online learning, online group work is increasingly relevant to improve teaching and learning. It can be an effective way of engaging learners in higher-level learning for positive learning outcomes (Stafford, 2021). Ekblaw (2016) suggests that group interaction enhances cognitive learning by providing practical experience, creative construction, and group dynamics.

Moreover, research shows that group work promotes both academic achievement and collaborative abilities (Johnson and Johnson, 2004; Baines et al., 2007; Gillies and Boyle, 2010, 2011). According to Gillies and Boyle (2011), the benefits are consistent irrespective of age (pre-school to college) and/or curriculum. When working interactively with others, students learn essential skills such as they learn to inquire, share ideas, clarify differences, problem-solve, and construct new understandings. Gillies (2003a, b) also stresses that students works best when they are in groups of four or five members as they feel more motivated to achieve than when they work individually. Thus, group work might serve as an incentive for learning, in terms of both academic knowledge and interpersonal skills. While group work is common and effective way for students, however, there are only a few studies that have investigated on online group work in Social Cognitive Theory. Thus, students prefer to interact in groups rather than individually as they believe that collaborative learning encourages everyone to work best with others and enhances socialization among members (Ghavifekr, 2020).

Statement of Problem

Despite the growing prevalence of online group work in educational settings, little is understood about learners' perceptions of this collaborative approach given that learners usually have poor comments about group work such as a lack of common purpose and facilitation (Schmid, 2022). Online group work success depends on technology knowledge management, support from management, increased learner awareness of utilizing E-learning systems, and demanding a high level of information technology from instructors, students, and universities (Alqahtani & Rajkhan, 2020). Hence, studying learners' perceptions of online group work is essential to improving online collaborative learning. Nevertheless, research on this mode of online collaboration is limited to studies during the pandemic (Alqahtani & Rajkhan, 2020; Schmid, 2022). Thus, it is necessary to investigate learners' perceptions of online group work in order to identify the factors that influence their engagement, experiences, and outcomes. By examining learners' perceptions of online group work, this

study will provide insights into the effectiveness of this pedagogical approach and inform educators on how to enhance online collaborative learning experiences for students.

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 their environment in online group work?
- How do learners perceive their behaviour in in online group work?
- How doe learners perceive their personal view in online group work?
- Is there a relationship between environment , behaviour and personal in online group work?

Literature Review

Advantages and Disadvantage of Groupwork

Group work or also known as collaborative learning can be defined as individuals who work together in pair or more with a purpose and contribute collective efforts to their interaction and mutually work towards interdependent goals (Johnson & Johnson, 2014). As the integration of technology takes place, students in higher education preferably use virtual platforms to accomplish their tasks (Lowe, 2014). Thus, online group work is now a new term to show the collaborative work done by the specific roles, and it is held virtually without physical attendance by the group members.

Group work has its advantages. Conrad & Donaldson (2004); Palloff & Pratt (2005 as cited in Koh & Hill, 2009) reported that group work enables students to develop higher critical thinking skills, as well as construct knowledge and meaning. In addition, according to Johnson & Johnson (2014), the members involved in group work can mutually influence each other to fulfil the project goal and share the motivation in completing the project, comparing when the project is done individually. However, group work also faces its challenges. For instance, a study conducted by Lowe (2014) reported that group work could be unproductive as the students come from different levels, weaker and stronger students, which interrupts the project outcome. Furthermore, according to Yilmaz (2019) as cited in Yilmaz et al (2020), the challenges can also be associated with group dynamics, interaction, and facilitating group members' collaboration may lead to communication difficulties. The author also added that group cohesion and atmosphere might negatively impact group dynamics and collaboration processes over time, leading to the deterioration of group collaboration.

Online Group

Online group work refers to the collaborative effort of individuals working together on a shared project or task through digital platforms and tools (Palloff & Pratt, 2007). It allows participants to connect and collaborate regardless of their physical location, leveraging technology to facilitate communication, knowledge sharing, and problem-solving. In online group work, participants work together to achieve common goals, complete assignments, or solve problems. They collaborate, communicate, and share ideas, resources, and responsibilities through various online channels such as discussion forums, video conferencing, shared documents, and project management tools.

Past Studies on Group Work

There have been many past studies on group work. A study conducted by Refeque et al (2018) on their research on the students' perception towards group work, had involved 274 participants to investigate their perceptions of completing the assignment individually or in a group. This study revealed that students with higher Cumulative Grade Point Average (CGPA) preferred to do the tasks individually. Meanwhile, students with lower CGPA preferred the task in groups. The study also added the preference of completing the tasks individually or in groups relating to the number of semesters the students have gone through.

A similar study was conducted by Elmassah et al (2020) in a similar area which was the students' perception towards group work. However, it looked at different literature on whether the students' work preference was related to their traits or experience in group work. This study managed to research 443 university students as the sample. The result of this study identified that students' perceptions of group work are shaped by their previous experiences. Positive perceptions of group work are formed due to successful past experiences, whereas the students' personal traits do not impact their preferences.

In addition, a research by Situmorang (2021) also supported the positive effects of group work. According to this study, the students showcased a positive attitude after the group work as it taught them to solve problems collaboratively, take responsibility for their own roles, and negotiate with peers. On the other hand, the study also revealed that the students prefer completing the task in groups because the task can be done effectively in a shorter period compared to doing it individually.

Past Studies on Online Group Work

Numerous scholarly articles and research papers have been dedicated to the subject of online group work in the field of education and learning. Palloff and Pratt (2005) have written extensively on the subject of online group work. In their book, they define online group work as follows: online group work involves the active participation of learners in groups or teams, utilizing electronic media to accomplish shared goals, complete assignments, and engage in interactive learning experiences. It involves communication, collaboration, and cooperation among group members who are physically separated but connected through online platforms and tools.

According to Whatley et al (2001), it is commonly believed that advancements in technology have made collaborative group projects easier, as information and technical expertise are readily accessible with just a few clicks. However, engaging in online collaboration poses its own set of challenges, and it is crucial for instructors to be aware of these challenges when planning such projects. The challenges associated with online collaboration include different schedules, work pace, and time zones; impossible face-to-face opportunities; secure file sharing; different computer platforms or applications; and different file formats.

Roberts and McInerney (2007) highlighted the compelling benefits of online collaborative learning, also known as CSCL (computer-supported collaborative learning). However, many instructors are hesitant to adopt non-conventional teaching and learning approaches due to perceived problems. The literature reveals seven commonly encountered problems associated with this teaching method. These include student resistance to group work, challenges in group formation, inadequate group-work skills, issues related to free-riding, potential disparities in student abilities, member disengagement from groups, and the assessment of individuals within groups. These challenges are commonly discussed in the

literature and need to be addressed for successful implementation of online collaborative learning.

Conceptual Framework

Figure 1 shows conceptual framework of the study. This study is done to explore online group interaction using the social cognitive theory by (Bandura, 2001). The theory views people as agents. During group interactions, the people can influence and be influenced by the team and the environment. This is because in team work, team members need to find ways to make interactions work (Rahmat, 2020). In this study, Bandura's (2001) components in social cognitive theory is scaffolded to merge with the element by Aderibigbe (2021) to reveal the concept in figure 1. During online interactions, the teacher's presence is important to set the pace for online environment and group activities. Learners interact with one another during the online group activities and this the group interaction sets the pace for social presence online mode. The interaction among the team members can take the form of problem-solving which helps to promote critical thinking skills. This sets the pace for the learners to experience cognitive via online group work

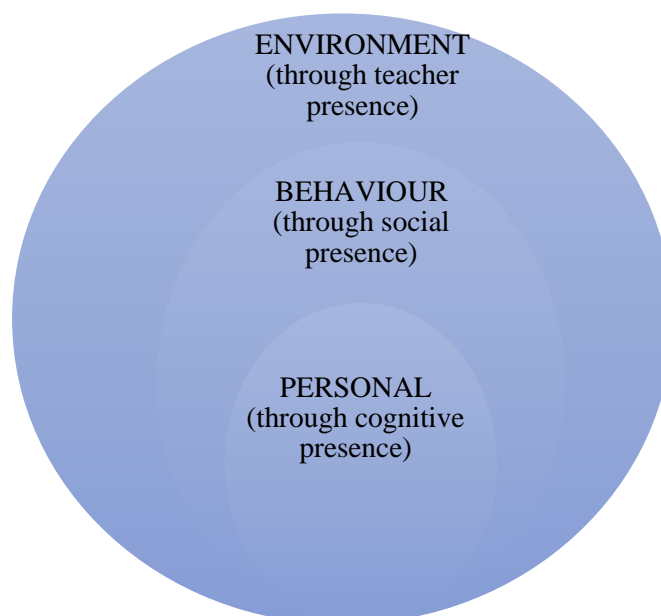


Figure 1- Conceptual Framework of the Study – Online group interaction through Social Cognitive Theory

Methodology

This quantitative study is done to explore motivation factors for learning among undergraduates. A purposive sample of 196 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Bandura (2001); 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 Personal. Section C has 8 items on behaviour. Section D has 8 items teaching presence.

Table 1

Distribution of Items in the Survey

SECTION	SOCIAL COGNITIVE THEORY (Bandura, 2001)	ELEMENTS Aderibigbe(2021)	NO. OF ITEMS
B	PERSONAL	COGNITIVE PRESENCE	8
C	BEHAVIOUR	SOCIAL PRESENCE	8
D	ENVIRONMENT	TEACHING PRESENCE	8
			24

Table 2

Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.865	24

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .865, 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

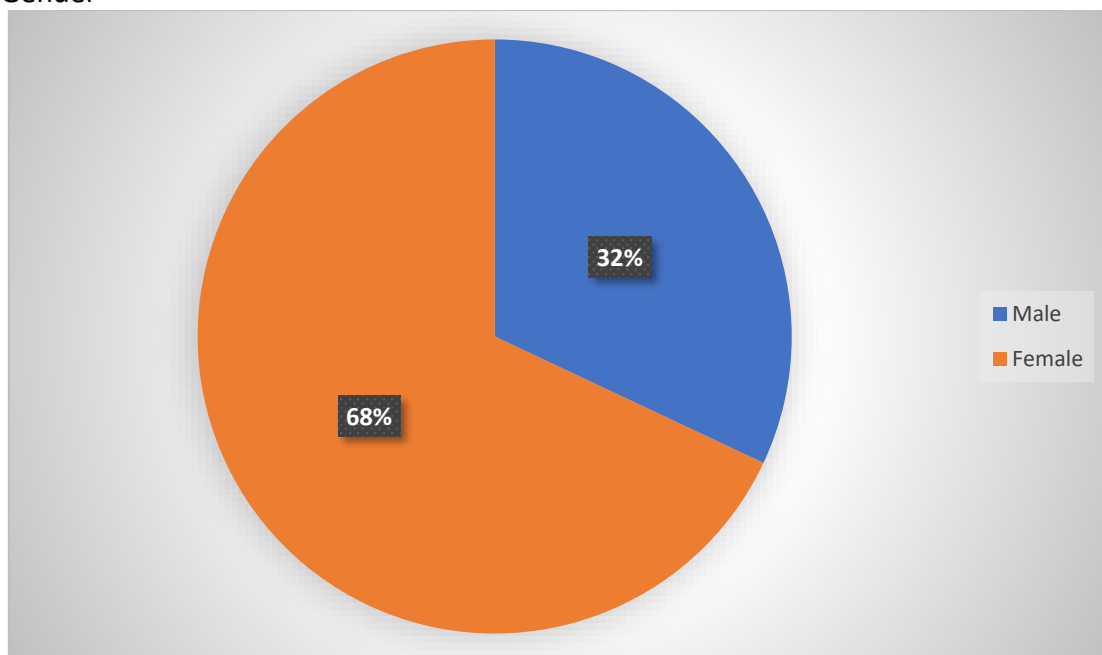


Figure 2- Percentage for Gender

The gender distribution of the respondents who participated in the study is provided in figure 2. Males accounted for 32% of the participants, while females constituted the majority with 68%. This gender breakdown highlights a significant gender disparity, where females are more represented than males in the studied sample.

Q2 Age Group

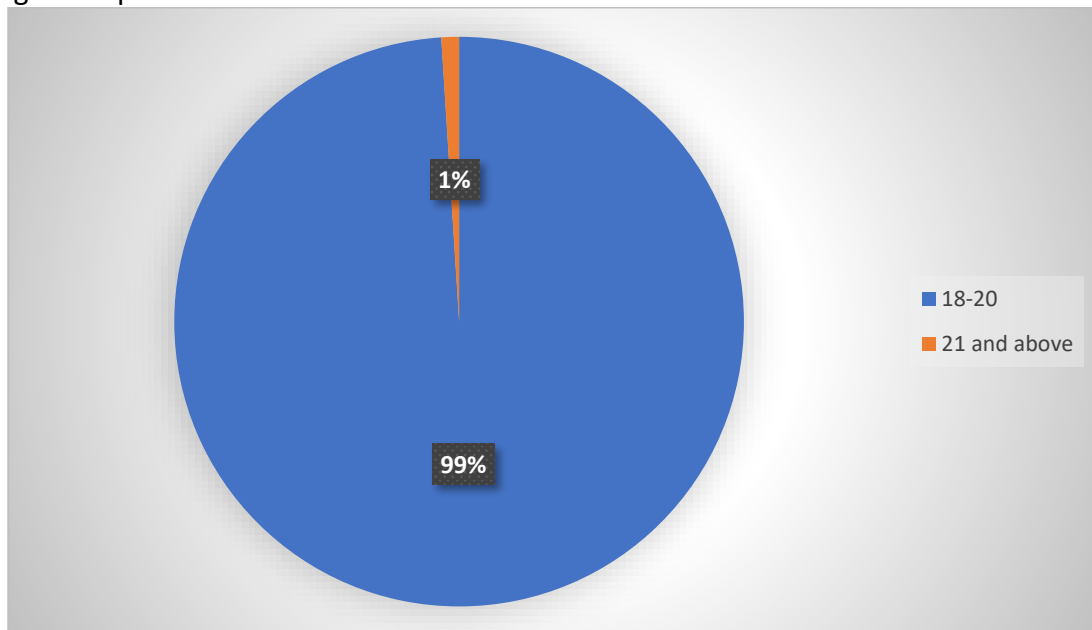


Figure 3- Percentage for Age Group

Figure 3 shows the age distribution of respondents involved in the study which reveals a striking pattern. The overwhelming majority of respondents, constituting 99% of the sample, fell within the age range of 18 to 20 years. Conversely, participants aged 21 and above represented a mere 1% of the total responses received. This remarkable concentration of younger participants suggests a clear skew towards a specific age group in the study cohort.

Q3 Faculty

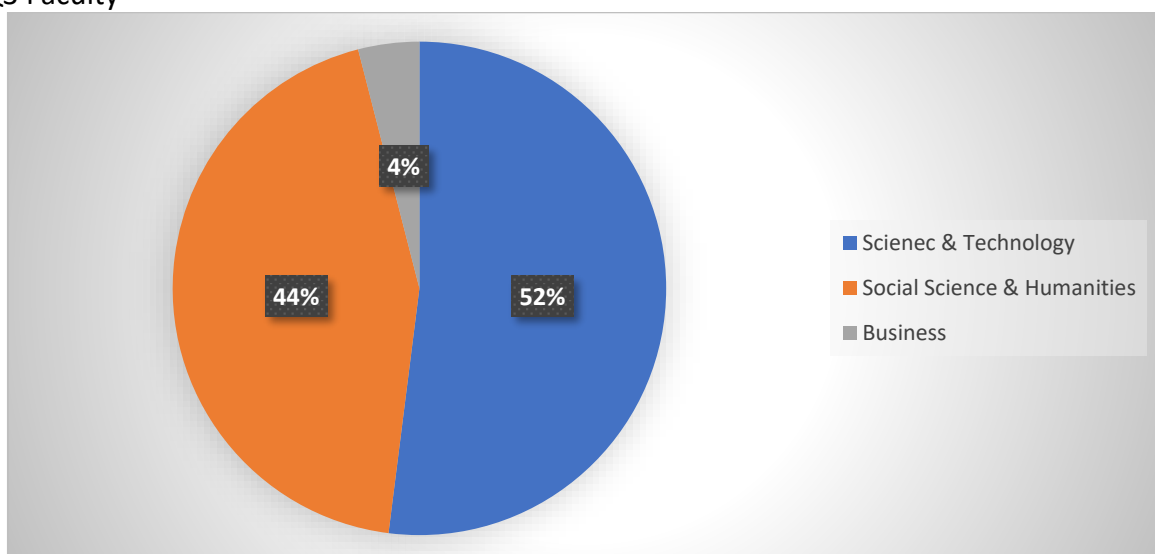


Figure 4- Percentage for Faculty

The findings in figure 4 indicate that among the respondents, the highest proportion, accounting for 52%, were affiliated with the field of Science & Technology. Following closely behind, 44% of the respondents identified themselves with Social Science & Humanities disciplines. In contrast, the Business field had the lowest representation, with only 4% of the participants belonging to this category. These results shed light on the distribution of respondents across different academic domains. The dominant presence of Science & Technology and Social Science & Humanities indicates a strong interest and participation in these areas of study among the surveyed population. The limited representation of individuals from the Business field suggests a relatively smaller proportion of respondents with a focus on business-related disciplines.

Findings for Environment

This section presents data to answer research question 1- How do learners perceive their environment in online group work? In the context of the research environment is measured by the elements in the teacher's presence.

(Teaching Presence)

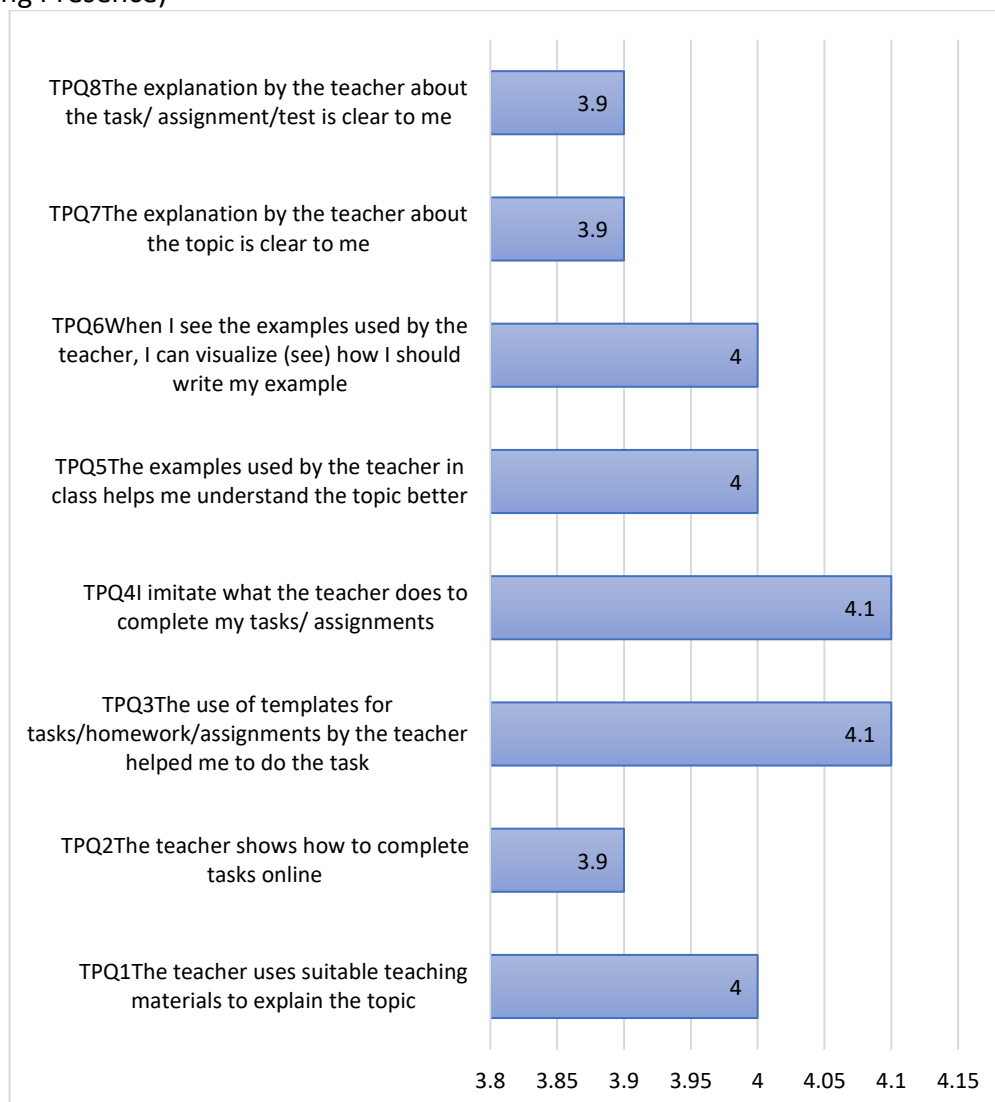


Figure 5- Mean for Teaching Presence

Based on figure 5 above, the highest mean score of 4 was recorded for TPQ3 and TPQ4 indicating the agreement among respondents that the use of templates for tasks, homework, and assignments by the teacher was helpful, and they imitated the teacher's actions to complete their own tasks and assignments. This highlights the positive influence of these instructional strategies on the respondents' engagement and task completion. TPQ1, TPQ5, and TPQ6 all received a mean score of 4 signifying a unanimous agreement among respondents regarding the effectiveness of the teaching materials used to explain the topic. Learners recognized the value of these materials in facilitating their understanding and engagement. The examples employed by the teacher during class sessions were also highly impactful. This indicates that learners found these examples instrumental in enhancing their comprehension of the topic. Furthermore, learners reported that these examples served as visual aids, enabling them to grasp the concepts and guide them in formulating their own examples. Finally, TPQ2, TPQ7 and TPQ8 all received the lowest mean score of 3.9, indicating an agreement among learners regarding the clarity of the teacher's explanations on the topic, task/assignment/test. These results emphasize the importance of clear communication and effective pedagogical strategies in fostering a conducive learning environment during online group work.

Findings for Behaviour

This section presents data to answer research question 2- How do learners perceive their behaviour in online group work? In the context of the research environment is measured by the elements in the social presence.

(Social presence)

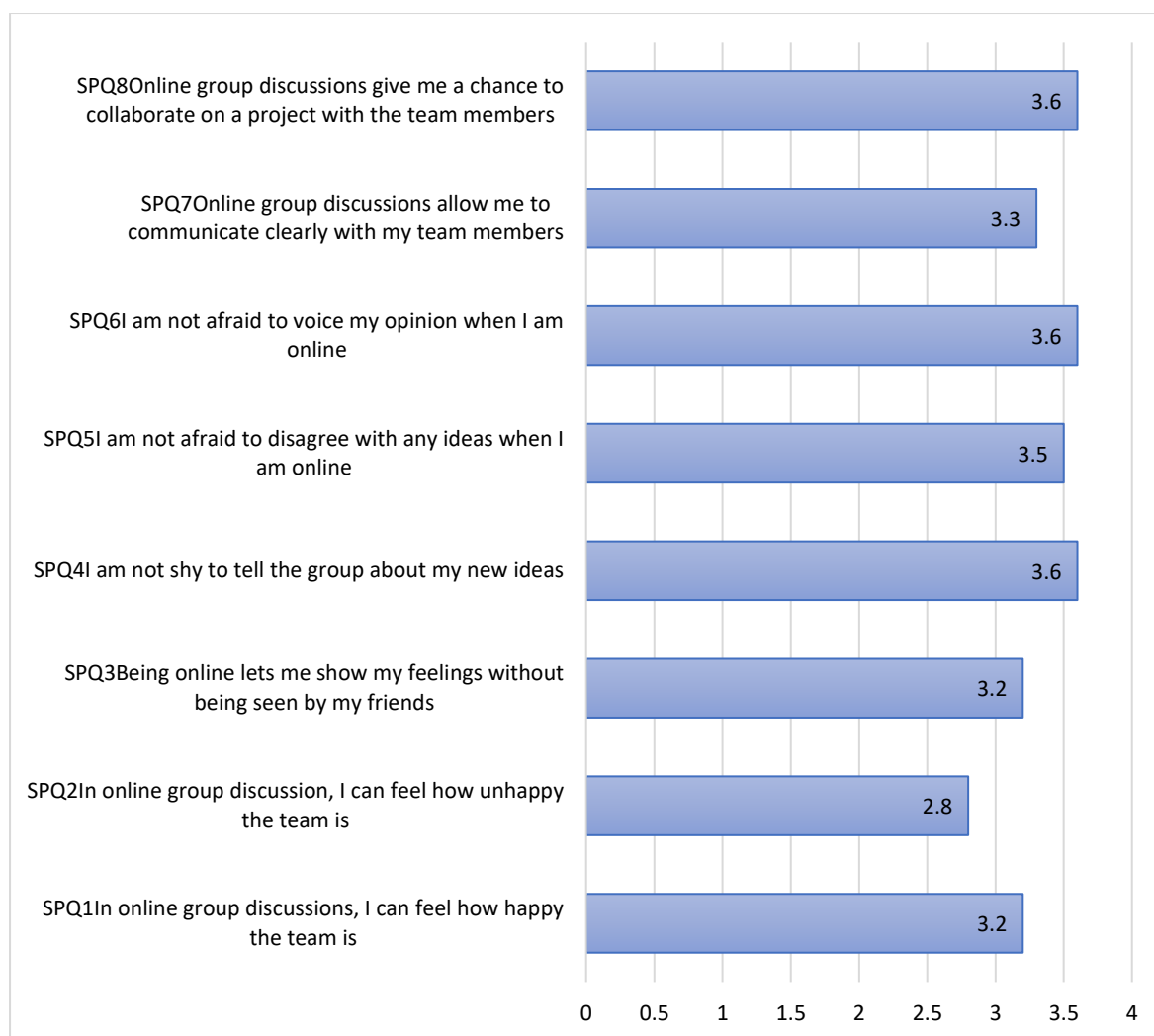


Figure 6 - Mean for Social Presence

Figure 6 above shows the response of respondents on Social Presence. It can be seen that SPQ4 received the highest mean score of 3.6, indicating that learners were not shy to share their new ideas with the group. This suggests a positive level of confidence and openness in expressing their thoughts within the online group context. Similarly, SPQ6 and SPQ8 also received a mean score of 3.6, indicating that learners were not afraid to voice their opinions and felt that online group discussions provided an opportunity for collaborative project work. These findings highlight the importance of creating an inclusive and supportive online environment that encourages active participation and idea sharing. On the other hand, SPQ2 received the lowest mean score of 2.8, suggesting that learners perceived a relatively lower level of unhappiness within the team during online group discussions. Overall, the mean scores provide insights into learners' perceptions of social presence and shed light on the dynamics of online group discussions.

Findings for Personal

This section presents data to answer research question 3- How do learners perceive their personal view in online group work? In the context of the research environment is measured by the elements in the cognitive presence.

(Cognitive Presence)

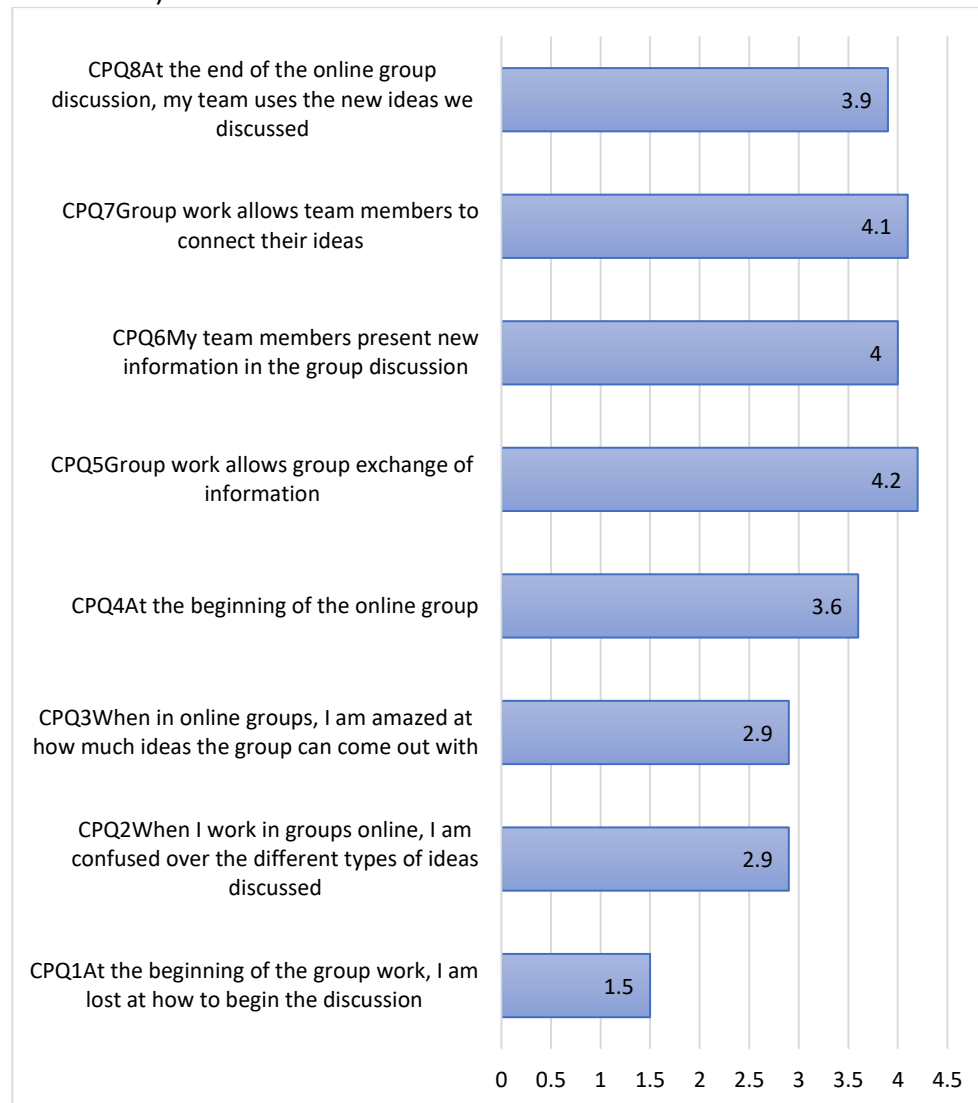


Figure 7- Mean for Cognitive Presence

Figure 7 above shows the respondents' response to the social cognitive presence. Referring to the result, CPQ5 scored the highest mean of 4.2 among others. From this result, the students preferably work in a group as they can unlock different information among the group members. On the other hand, they can also learn further details about the assignment. Meanwhile, the CPQ7 shows a slight difference from the previous mean, which is 4.1. From here, we can learn that the group members are comfortable with sharing the information with other group members as this action allows them to elaborate their ideas with each other and encourage them to complete their assignment. CPQ6 also shows a relatively higher mean of 4, indicating that the group discussion significantly impacts students' comprehension of assignments. Therefore, based on the mean of CPQ5, CPQ6 and CPQ7, the result shows that the students are pleased with the group as it significantly impacts their discussion of a task. Finally, CPQ1 received the lowest mean of 1.5, indicating that the students already have a general idea if assigned an assignment requiring a group discussion.

Findings for Relationship between

This section presents data to answer research question 4- Is there a relationship between environment , behaviour and personal in online group work?? To determine if there is a significant association in the mean scores between environment, behaviour, personal components, data is analysed using SPSS for correlations. Results are presented separately in table 3, 4, 5 and 6 below.

Table 3

Correlation between Environment and Behaviour

Correlations

		Environment	Behaviour
Environment	Pearson Correlation	1	.359**
	Sig. (2-tailed)		.000
	N	196	196
Behaviour	Pearson Correlation	.359**	1
	Sig. (2-tailed)	.000	
	N	196	196

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

Table 3 shows there is an association between environment and behaviour. Correlation analysis shows that there is a low significant association between environment and behaviour ($r=.359^{**}$) 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 weak positive relationship between environment and behaviour.

Table 4

Correlation between Behaviour and Personal Components

Correlations

		Behaviour	Personal
Behaviour	Pearson Correlation	1	.352**
	Sig. (2-tailed)		.000
	N	196	196
Personal	Pearson Correlation	.352**	1
	Sig. (2-tailed)	.000	
	N	196	196

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

Table 4 shows there is an association between behaviour and personal components. Correlation analysis shows that there is a low significant association between behaviour and personal components ($r=.352^{**}$) 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 weak positive relationship between behaviour and personal components.

Table 5

Correlation between Environment and Personal Components

Correlations

		Environment	Personal
Environment	Pearson Correlation	1	.478 ^{**}
	Sig. (2-tailed)		.000
	N	196	196
Personal	Pearson Correlation	.478 ^{**}	1
	Sig. (2-tailed)	.000	
	N	196	196

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

Table 5 shows there is an association between environment and personal components. Correlation analysis shows that there is a low significant association between environment and personal components ($r=.478^{**}$) 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 weak positive relationship between environment and personal components.

Conclusion

Summary of Findings and Discussions

The findings of the study revealed that teachers' presence plays a vital role in online group work. Learners found that templates for tasks, homework, and assignments used by the teachers were very helpful to do the task online. In addition, imitating teachers' actions helped them to complete tasks in online group work. The effectiveness of teaching materials and examples during class sessions was also recognized as learners found them useful in building their understanding and engagement. Furthermore, clear communication and effective pedagogical strategies are important in fostering a conducive learning environment during online group work.

This survey results also demonstrate learners' confidence in sharing ideas in online group work. It indicates learners are able to share their ideas in online group discussions. On the other hand, results also show that students prefer working in groups as it helps them to understand more about their assignments. They can unlock information and learn more about their assignments. They are also comfortable sharing information and completing assignments

in online group interaction. Furthermore, there are weak correlations between environment, behaviour and personal views.

Pedagogical Implications and Suggestions for Future Research

It has become clear that this study showed positive perception towards online group interaction. Online group interactions are beneficial in many ways. However, this study has limitations, especially in terms of the respondents, which focus on students from a single university in Malaysia. Therefore, future research is recommended to focus on students from various universities that might experience different online group working tasks.

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