

Group Online Engagement: An Analysis From Tuckman Model

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Abstract

The use of group work strategy or collaborative learning can enlighten and benefit students in studying and completing tasks assigned to them. In view of this, online group work has been incorporated into online learning to promote student engagement in their learning process. However, there are also challenges related to this approach as the students would have to manage their collaborative work with other group members virtually. This study investigated the feasibility of conducting online group work by examining the students' engagement through four group developmental stages, namely forming, storming, norming and performing. This quantitative research involved 141 undergraduates in several public higher learning institutions in Malaysia. A survey instrument was used to collect data related to forming, storming, norming and performing in an online group work where the items were divided into four sections namely demographic profile, learner-to-learner engagement, learner-to-instructor engagement, and learner-to-content engagement. The descriptive analysis of the quantitative data revealed a significant finding to prove that learners have high engagement in online learning when doing group activities or tasks. The result from this research would be useful for educators to be more aware of the effective strategies to enhance students' understanding and improve online engagement. Future research could also be carried out to investigate the efficacy of online group in a larger scale from various fields to further strengthen the findings from this research.

Keywords: Online Learning, Group Work, Learner Engagement, Instructor Engagement, Content Engagement

Introduction*Background of Study*

There are many advantages that are associated with the strategy of group work or group discussion in studying. As defined by Zhang et al (2020), group discussion is a process in which students collaborate to solve problems. Group work or group discussion is a strategy employed by educators to facilitate students' learning. Since many universities are now utilizing open and distance learning (ODL) as another platform for learning other than the usual face-to-face interaction, a lot of research has been done to investigate online learning, student online engagement and group online engagement. Undeniably, online learning poses a lot of advantages for students and studies have shown that students gain a lot of benefits from online learning and discussion (Zhang et al., 2020). However, these benefits are only viable if there is students' engagement in online classes. According to Yusof et al (2020), even though learners of this current generation are deemed to be digital natives and are more comfortable with the online setting, students' learning engagement is still a major concern. To the educators, online engagement is a problem that they face when doing online class and in order for them to overcome this problem they need to consider effective strategies to increase students' engagement in online class. Zhang et al (2020) defined student engagement as the student's mental obligation and effort to learn, understand, and acquire knowledge, skills and technology that are focused on academic work. Sometimes, it is difficult for students to engage in online classes because it requires considerably more effort on their end. They need to be independent learners and be accountable for their own learning. If students are unaccustomed to learning on their own, they may feel overwhelmed. However, assigning group work to online learners can help them be more engaged during online classes and aids in task completion as they can get support and help from their group members. Therefore, this study intends to facilitate further understanding of group online engagement, specifically with open and distance learning, with the hope that it gains a lot of opportunities to improve group online engagement.

Statement of Problem

Group work is one of the teaching and learning strategies that is often associated with collaborative learning. The formation of learning communities through the use of group works facilitates in improving students' academic achievements and decreases performance gaps between students of different abilities (Chi & Kadandale, 2022). When students of different abilities are grouped together, there are more chances for them to encounter a more knowledgeable other (MKO), allowing mutual exchange of ideas and knowledge enhancement. In addition, the positive effects of working in groups go beyond the classroom setting. Through their participation in group works, students can hone a number of soft skills (i.e. communication, leadership and teamwork) that will serve them well at the workplace and contribute to the success of their organizations. Interacting with their group members also benefits students through the exchange of feedback (Payne et al., 2006) which adds to their existing knowledge and improves communication skills. This is crucial for learner engagement. Even when the learning environment is shifted online, there are still benefits that can be gained from utilising group work in the virtual classroom. As students are already familiar with the technological aspect of online interaction, incorporating online group work within an academic setting is made much easier. For Open and Distance Learning (ODL)

students, collaborative group projects prevent them from feeling isolated from their classmates which then make the assigned task much more enjoyable (Donelan & Kear, 2018). Despite the positive outcomes associated with group work, there are some concerning issues about the dissonance between perceived benefits of group work and actual ones obtained by the students. A commonly held belief is that group work leads to collaborative learning by allowing students to participate in meaningful discussion related to the given task (Summers & Volet, 2010). However, this may not often be the case. The lack of social cohesion between group members may lead to the formation of subgroups that contribute to the unequal distribution of tasks which then fuel frustration among group members (Jones et al., 2022). Furthermore, there are issues relating to learner resistance towards group work activities that can impede group task completion and adversely affect the learning process. Learner resistance occurs when students feel frustrated at the breakdown in the conventions of group work. For instance, the lack of responsibility and accountability among group members (i.e. free-riders) can lead to resentment and loss of motivation, particularly if the group performance is assessed as a whole (Wong et al., 2022). In addition, the inability to negotiate among group members with regards to their respective roles in the groups may also disrupt their progress. This affects both online and offline group interactions. However, in terms of adjusting to each other and creating a healthy working environment for the group, groups that interacted face-to-face had a significantly higher percentage of success (Smith et al., 2011). While conducting frequent group meetings is considered to be a contributing factor for the improvement of group interaction (Payne et al., 2006), it is not always feasible for online learners. For example, learners in the ODL environment not only have to align their individual schedules with the group meetups, but they also have to contend with logistical issues of the group members which can be time consuming to resolve. Thus, they are afforded less chances for conflict management.

Establishing good teamwork requires collective effort of the team members and should be developed organically to ensure its success. The forming, storming, norming and performing stages proposed by Tuckman (1965) put forth the idea of group members progressing through the stages over time to eventually achieve their optimal potential instead of expecting the group to immediately establish meaningful connections with one another. Successful group work formation is made even more challenging when students have to navigate around the challenges presented by online learning, namely the difficulty in. Hence, this study is done to investigate how group development stages, as proposed by the Tuckman model, are reflected within the context of online group work. This investigation is done to answer the following questions;

- RQ1-How is forming done in online group work?
- RQ2-How is storming done in online group work?
- RQ3-How is norming done in online group work?
- RQ4-How is performing done in online group work?

Literature Review

Characteristics/ Advantages of Group Work

Group work is a common practice in higher education due to its flexibility in serving different pedagogical purposes, be it as a learning objective or a means of achieving academic excellence (Chiriac, 2014). For instance, group work can be set as the objective of a lesson where the students are taught how to practice collaborative skills when discussing a project.

At the same time, group work can be used as a performance measurement tool of their overall performance in the assessment.

But what makes group work work? As an instructional approach, group work combines both cooperative and collaborative learning, which according to research, has positive effects on student learning (Davidson et al., 2014). Cooperative learning is defined by Johnson and Johnson (2008) as the interdependence between learners to achieve a specific goal. The learners would perceive that each group member needs to put in the effort so that they can achieve the goal together. In doing so, it encourages them to utilize their maximum learning potential.

The collaborative learning aspect, meanwhile, occurs when students interact with other group members to listen to their input, ask questions, seek clarifications, and provide opinions during discussions (Gillies, 2019). As a result, they can learn from each other on how to work more efficiently (Lin & Huang, 2020). To achieve this, they would put into practice metacognitive skills such as planning, monitoring, and evaluating (Durak & Uslu, 2021). In the long run, this would enable them to take responsibility for their own learning and become successful learners.

Challenges of Group Work Online

Despite its positive attributes and contributions in both teaching and learning, group work presents challenges in its application in the classroom especially in the online setting. Chang and Kang (2016) mentioned the complicated and complex nature of online group work due to its asynchronous characteristics, the lack of physical presence and the need of skills in managing human online relationships, technology and content related tasks. The distance in time and space leaves group members feeling disconnected which could contribute to losing sense of belonging and support. On the other hand, technical problems could further worsen the learning experience as communication could delay, hinder and disturb the effectiveness of online social interaction. Thus, it is evident that communicating online with group members is more stressful than completing the group tasks or activities.

MacNeill, Telner, Sparaggis-Agaliotis and Hanna (2014) also perceived group work to be labour intensive as group members require time to collaborate and compromise. Jackson et al (2014) shared a similar viewpoint as the challenges that small groups faced are triggered due to the different levels of responsiveness and engagement, and different expectations and commitments. This was revealed in Chang and Kang (2014) study that even with established roles for each member to complete the group task, irresponsible behaviours were still reported, namely: unequal distribution of tasks, incomplete and incorrect submissions, and free-riders effect. These contributing factors make group work cumbersome and less ideal to be implemented in online distance learning.

Past Studies

Past Studies of Advantages Group Work

Many studies have been done to investigate the effects of group work in the teaching and learning environment across various programmes and courses. One of these studies was Brannen, et al (2021) that not only highlighted the advantages of group work, but also further explored the effectiveness of a group work contract on students' experience of participating in group work. In this study, two groups of undergraduate students enrolled in face-to-face

(n=168) and online (n=105) formats of the Fundamentals of Nutrition course, were invited to complete an online survey. Findings revealed that the participants described positive group work experiences throughout their course of study and these were further enhanced by having a group work contract at the start of the assignment. It was also reported that students achieved better grade outcomes by working collaboratively. Han et al (2021) added to the literature by conducting a case study involving two cohorts of year two undergraduate students, 30 and 32 students respectively, of Industrial Design programme at a university in the UK to compare the impacts of employing group work and individual work on design creativity. Even though no statistically significant difference was found between the two groups in terms of novelty, usefulness, and overall creativity of the students' final design, the study suggested a combination of individual work and group work in design education to produce students with various skills and abilities, as well as offer different learning experiences to them. In sum, group work has been advocated in both traditional and online courses, as well as alongside individual work to inculcate a positive environment and enrich learning experiences.

Concurrently, there have also been many past studies on group work in the language teaching and learning context. Among these studies is Hung and Mai (2020) which investigated teachers' perceptions and implementations of group work in their EFL classes. The data was collected via a questionnaire completed by 105 high school English teachers within Dong Thap province, South of Vietnam, along with video recordings from 4 of these teachers. Analysis of the questionnaire indicated that virtually all the teachers perceived that group work could likely provide opportunities for students to use English communicatively, discover their own speaking ability right in the classroom as well as reduce stress and gain more English input from other students. Meanwhile, data from the video recordings showed that all four teachers were devoted to implementing group work in their classrooms. In another study, the students' perceptions of group work were examined instead. Situmorang (2021) employed a survey among 50 tenth and eleventh graders in a school in Jakarta and found that the participants believed that group work is advantageous because it helped them solve problems collaboratively, taught them to take responsibility, negotiated with peers, made task completion easier, and shortened the time for handling assignments. It was also reported that they preferred a combination of individual and group work techniques in learning. Both of these studies advocated the use of group work in language learning as their implications of study. All in all, the implementation of group work in language classrooms has been repeatedly described as an aid in promoting a positive learning environment where anxiety and workload could be reduced, and communication and soft skills could be enhanced.

Past Studies of Challenges in Online Group Work

When assigning students with group work, past studies have investigated issues related to the matter (e.g. Chang, 2018; Harianingsih et al., 2021; Thomas & Thorpe, 2016) in various academic levels especially in terms of the challenges involved in online group work (e.g. Chang & Haijun, 2016; Hurst, 2020; Wildman et al., 2021). For example, a recent qualitative study by Harianingsih et al. (2021), investigated the experiences of four first-year students (two males and two females, 19 to 20 years old) at a university in Indonesia. These students were enrolled in English for Specific Purposes courses for at least one semester, where the courses were conducted fully using online platform and relied mainly on group tasks. The researchers

utilised interview guidelines at the main research instrument for the data collection and the interview questions were adapted from Song et al (2004); Koh and Hill (2005), in order to explore the English as Foreign Language (EFL) students' perceptions of their enrollment in online learning environments. Aside from exploring the benefits of online learning, during the interviews, the questions were focused on exploring the challenges that the participants experienced in their learning process. The most significant challenge reported by the participants in this study was unfamiliarity among group members and this was followed by communication difficulties due to internet connection and language difficulties when attempting to communicate with other group members. With regard to unfamiliarity among group members, the participants shared that not being able to get to know each other made it difficult for them to connect with each other online as opposed to working on tasks together in a physical classroom. This also led them to feel less motivated as they did not have the opportunity to build rapport with the other students. The second challenge was more related to technical difficulties involving the internet connection. When certain students experienced unstable internet connection, the other group members had problems to conduct synchronous online meetings and discussions. Additionally, the participants also cited how they were unable to express their thoughts and opinions when completing the online group tasks due to their low proficiency in the English language which resulted in their inability to communicate effectively with the other group members. This challenge is also related to the first challenge which is unfamiliarity among group members as the students did not feel comfortable expressing their thoughts in front of 'strangers' due to the language barrier.

Another recent study by Wildman et al (2021) investigated the impacts of the pandemic on group work activities. The analysis of 90 open-ended survey responses among undergraduates in the U.S. who worked on online group projects during the outbreak, revealed three themes: (1) challenges experienced; (2) changes to team communication, tasks and roles; and (3) consequences to team progress and outcomes. The data were analysed using Braun and Clarke's (2006) thematic analysis and regarding the challenges experienced by the participants, the study revealed that external influences, geographical differences, and team member performance issues affected their ability to communicate, coordinate, and achieve their intended shared goal, in doing the assigned group work. In terms of 'outside' or external influences, the participants cited distractions caused by the environment at home as well as the "competing demands" in completing online assignments for other courses. Regarding geographical differences, in the study, the participants described that the physical location of the group members affected their meeting schedules and project timelines because the students were located at different time zones. In the U.S., there are six different time zones and during the pandemic where some of the students were required to abide by the stay-at-place orders, the rest of the group members had to accommodate these students during synchronous meetings and online communication. The last challenge reported in this study which impacted online group tasks was the performance issues such as the forgetfulness of the group members, increased procrastination among the members, as well as issues related to social loafing and self-management. The study emphasises that working on online group projects during the pandemic where most of the students had to work remotely from their homes, with no structured routine like attending conventional classes, affected the group's ability to attain their shared objectives or goals. Some of the participants cited how certain group members were unable to communicate effectively due to minimal

online interaction compared to when they had to meet face-to-face to complete their group projects.

Findings from these two studies indicate that educators have to be mindful of the external and personal challenges accompanying online group tasks and prepare solutions to lessen the negative effects highlighted in the past studies. Online group work has the potential to enhance students' active learning and/or participation but at the same time, external and human factors may affect its effectiveness in achieving the learning outcomes.

Conceptual Framework

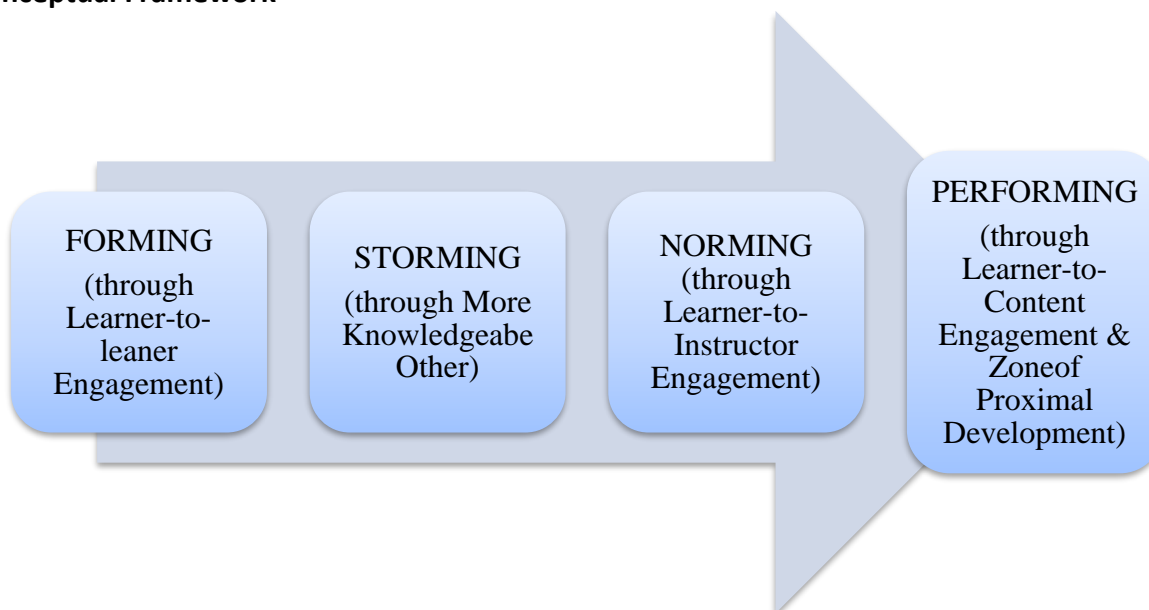


Figure 1- Conceptual Framework of the Study: Group Online Engagement: An Analysis from Tuckman Model

Figure 1 presents the conceptual framework of the study. This study is adapted from the Tuckman (1961) theory, factors in group work by Rahmat et. al (2021) and online engagement by (Martin & Bolliger, 2018).

Forming

According to Tuckman (1965) the first stage, namely forming, looks at how the members act and relate to one another as individuals. This is so in order for learners to find suitable group members, they would need to know each other first as they prefer to choose their own group members instead of being assigned in a group. Hearn (1957) added that this is the stage where group members attempted to construct and locate their position in the group from the first stage of grouping (Tuckman, 1965). By engaging with others, learners are able to find compatibility with other group members when forming a group. This expresses the dependency needs on other people when completing a task given to them. As supported by Tuckman (1965) group unity when forming a group is one of the important features of this phase. By going through the forming stage, learners would then be able to ask help from group members, get support from them to complete tasks given to them and enhance understanding as well.

Storming

In this second stage of Tuckman's model, group members began interacting with each other. While navigating the discussion at this stage, members may display emotional reactions as they work towards completing group tasks. (Colombini & McBride, 2012). The dynamics involved in a group discussion also necessitates the members to collaborate with others in the group who possess higher levels of abilities than them or the MKOs. Positive interactions with MKO lead to better development of cognitive abilities such as language and problem solving skills (Doolittle, 1995) However, interactions at the storming stage may lead to conflict as members strive to set boundaries and preserve individual preferences (Tuckman, 1965)

Norming

In this third phase, the word Norming suggests that the group would have come to an agreement on the standard and acceptable behaviours related to communicating and working with one another. As the group develops to become more accommodating toward one another, Tuckman (1965) explains that the members would interact more confidently and decisively. The instructor and the learners (i.e. group members) may take on new roles as demonstrated by Taylor (2005) in the online *The Group Project Project Modules*. At this stage, the group members would complete their individual tasks and report back to the group. Here, the instructor may step in to facilitate the communication between the group members when they go through the process of exchanging work. However, Taylor warns that instructors should strictly keep to the facilitator role of a 'questioner' rather than giving directions and answers (ibid, p.35). The learners should manage the group work and exchanges on their own rather than depending on the instructor.

Performing

In the final stage, the 'performing' stage or also known as the problem solving stage, according to Tuckman (1965), it is the most essential stage as the group finally manages to resolve structural issues and become more supportive of one another to perform and solve problems. The interdependence and interpersonal structure between group members becomes the tool of completing task activities since members' roles become more flexible and functional. As members become more engaged with learners, knowledgeable others, and instructors, active learning takes place, in accordance with Vygotsky's zone of proximal development, where learning is believed to take place with the assistance of others. By achieving positive interaction and engagement, the group then shifts focus towards completing the task. To ensure the completion of the task, content and information are critical to build the group's understanding of the task and enhance critical thinking skills to perform. Martin and Bollinger (2018) also highlighted the importance of well-structured content that are presented in various formats and related to real-world application projects in order to keep learners engaged in the learning process and perform in group work.

Methodology

This quantitative study is done to investigate. 141 participants were purposely chosen from a public university in Malaysia. The instrument (refer to table 1). used is a survey adapted from (Rahmat et.al., 2021; Martin & Bolliger, 2018). Apart from the demographic profile in Section A, there are 2 other sections. Section B, C & D has 22 items on group work, section D, E & F has 20 items on online engagement.

Table 1

Distribution of Items in Survey

SECTION		FACTORS	NO OF ITEMS
B	GROUP WORK	Social Interaction	8
C		MKO	7
D		ZPD	7
		Total for Group Work	22
E	ONLINE ENGAGEMENT	Learner-to-learner Engagement	6
F		Learner-to-Instructor Engagement	7
G		Learner-to-content Engagement	7
		Total for Online Engagement	20
		Total No of Items	42

Table 2

Reliability Statistics

Cronbach's Alpha	N of Items
.964	42

Data is collected via google form and analysed using SPSS version 26. With reference to table 2, the SPSS analysis revealed a Cronbach alpha of .964, thus showing high internal reliability for the instrument. Data is presented in terms of percentage for the demographic profile and mean scores to answer the research questions.

Findings*Findings for Demographic Profile*

In this study, as can be seen in Table 3, among the total the participants, 17.7% (n=25) were male and 82.3% (n=116) were female ESL students, who studied full-time at Universiti Teknologi MARA (UiTM) Shah Alam, UiTM Cawangan Johor and UiTM Cawangan Melaka. The participants were all L1 male and female Malay students from 18 to 23 years of age who had had at least eleven years of exposure to the English language in elementary and secondary schools. During the data collection period, they were enrolled either in Diploma in English for Professional Communication or Bachelor in English for Professional Communication or Bachelor in Intercultural Communication.

Table 3

Participants' Gender

	Gender	Total	Percentage
1	Male	25	17.7
2	Female	116	82.3

		141	100
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Table 4

Participants' Study Mode

	Study Mode	Percentage
1	Online learning	81.6
2	Face-to-face	3.5
3	Both	14.9

Table 4 shows the participants' mode of learning during the data collection process. As mentioned earlier, due to the Covid-19 pandemic, most of the subjects taught in Malaysian higher learning institutions resorted to online learning. This is evident from the data gathered from the self-reported survey where the majority (81.6%) of the participants indicated that they attended online classes, while 14.9% of them attended both online and face-to-face classes and only a small percentage (3.5%) of the participants attended face-to-face classes.

All of the participants in the study were undergraduates students. In terms of their current academic level, based on the survey, majority of the respondents were diploma students (66%) from UiTM Cawangan Johor and UiTM Cawangan Melaka while and the rest of them were degree students (34%) from UiTM Shah Alam. This is shown in Table 5.

Table 5

Current Academic Level

	Level	Percentage
1	Diploma	66
2	Degree	34

Findings for Forming

This section presents data to answer research question 1- RQ1-How is forming done in online group work? In the context of this study, forming is observed during (a) learner-to-learner interaction and (b) social interaction.

(a) Learner-to-learner Interaction

Table 6

Mean for Learner-to-learner Interaction

Statement	Mean
L2LQ1 Does collaborative learning promote peer-to-peer understanding?	4.05
L2LQ2 Are you more likely to ask for help from your peers?	4.08
L2LQ3 Do you prefer to be in the same group with your chosen peer for online activities?	4.45
L2LQ4 Do you think that the sense of community helps you to engage in online class?	4.09
L2LQ5 Do you think support from peers motivates you to finish tasks?	4.35
L2LQ6 Do you think that support from peers prevents you from dropping out of course?	4.30

Table 6 presented the mean scores of survey items for learner-to-learner interactions. The findings in table 6 showed that the majority of the participants preferred to choose their own group members when doing online tasks and they felt motivated to complete their tasks when they had support from their friends. Furthermore, the third highest mean score from the table revealed that support from their friends stopped them from quitting their study (M=4.30). Participants feel that collaborative learning enhances participants' understanding when studying has the lowest mean score among other survey items (M=4.05). Results also indicated that they do not hesitate to ask for their friends' help when facing difficulties and by having group members helped them to be engaged in online class. Overall, the results showed that participants have a positive feeling towards learner-to-learner interaction.

(b) Social Interaction

Table 7

Mean for Social Interaction

Statement	Mean
SIQ1 Group work helps me to interact with others.	4.34
SIQ2 Group work helps me to improve interpersonal skills.	4.19
SIQ3 Group work helps me to improve my language skills.	4.09
SIQ4 Group work allows me to understand non-verbal cues.	3.92
SIQ5 Group work allows me to meet new friends	4.21
SIQ6 Group work lets me learn to solve problems	4.21
SIQ7 Group work lets me see other people's point of view	4.47
SIQ8 Group work is a fun activity in class	3.75

The mean scores for statements related to social interactions indicate that the respondents are generally aware of the benefits they get from online group work, especially in terms of seeing different perspectives from their group members (M=4.47) and interacting with one another (M=4.34). As the forming stage requires the members to find ways to fit in and create a community, they see value in group work interaction as providing the means to meet new people and practice problem solving skills (M=4.21) as they work on setting up individual roles and purposes in their respective groups. However, respondents also think that online group interaction was not very helpful in getting them to discern non-verbal cues used by their group members (M=3.92). In addition, despite the reported benefits of online group work for social interaction, it is not perceived as an enjoyable classroom activity (M=3.75).

Findings for Storming

This section presents the data to answer research question 2-RQ2-How is storming done in online group work? In the context of this study, storming is done with the presence of More Knowledgeable Other (MKO).

(C) More Knowledgeable Other

Table 8

Mean for More Knowledgeable Other

Statement	Mean
MKOQ1 Group work allows me to learn communication skills from others	4.25
MKOQ2 Group work allows me to practice listening skills	4.28
MKOQ3 Group work allows me to learn how others justify their opinions.	4.40
MKOQ4 Group work allows me to have meaningful interactions.	4.06
MKOQ5 Group work lets me learn how other solve communication problems	4.18
MKOQ6 Group work lets me learn how others present ideas	4.41
MKOQ7 Group work lets me want to learn more from others	4.36

The mean scores for all statements were high which indicates the value they see in other group members in terms of helping them learn better. The respondents mostly perceived group work as a way for them to learn how the other group members present their ideas (M=4.41) and justify their opinions (M=4.40).

Findings for Norming

This section presents data to answer research question 3-How is norming done in online group work? In the context of this study, norming is done with the presence of the instructor

Table 9

Mean for Norming

Statement	Mean
L2IQ1 Does your instructor's teaching style involve students' active participation?	4.15
L2IQ2 Do you feel encouraged by your instructor to keep engaged in online classroom?	3.91
L2IQ3 Does your instructor provide feedback from your previous assessment?	3.78
L2IQ4 Do you feel feedback from your instructor on your performances are clear and positive?	3.90
L2IQ5 Does your instructor use more than two communication tools to stay connected with students?	4.00
L2IQ6 Do you think that online platforms used by your instructor for your online class are effective and convenient?	4.09
L2IQ7 Does your instructor maintain the ongoing interaction with students after online class?	3.92

Based on the data presented in Table 9, the engagement between the instructor and learners are effective as teaching styles implemented increased students' active participation (M=4.15). Instructors continue to maintain students' active engagement by using effective and convenient online platforms (M=4.09). To further promote the nominal stage, the instructors use more than two communication tools to stay connected with the students (M=4.00). The learner-instructor engagement is even extended where instructors continue to

have ongoing interaction after classes ($M=3.92$). Participants then reported that with positive instructor engagement, they positively feel encouraged to continue participating in online classes ($M=3.91$). Meanwhile, the lowest mean scores recorded by participants in regards to the engagement between learners and instructors is in terms of instructor feedback, participants reported that the feedback provided by the instructors are clear and positive ($M=3.90$) and instructors provide feedback from previous assessments ($M=3.78$)

This section presents data to answer research question 4-RQ4-How is -performing done in online group work? In the context of this study, performing is done with the benefit of (a) zone of proximal development and (b) learner-to-content interaction.

(a) Zone Of Proximal Development

Table 10

Mean for Zone of Proximal Development

Statement	Mean
ZPDQ1 My communication skills are improved when I interact in a group.	3.99
ZPDQ2 My self-confidence is improved when I interact in a group.	3.74
ZPDQ3 My decision-making skills are improved when I interact in a group.	3.96
ZPDQ4 My problem-solving skills are improved when I interact in a group.	4.04
ZPDQ5 I get more ideas in a group	3.99
ZPDQ6 I improve my listening skills in a group	4.23
ZPDQ7 I learn negotiation skills in a group	4.25

Table 10 exhibits the mean scores for Zone of Proximal Development. Based on the data presented, majority of the participants shared that they learned negotiation skills ($M=4.25$) and improved their listening skills ($M=4.23$) when they worked in a group. This is followed by the belief that they were able to improve their problem-solving skills ($M=4.04$) and communications skills ($M=3.99$) when they interacted in a group. They also felt that they were able to get more ideas when they worked in a group ($M=3.99$). Additionally, participants perceived that group work helped them improve their decision-making skills ($M=3.96$) and self-confidence ($M=3.74$).

(b) earner-To-Content Interaction

Table 11

Mean for Learner-to-Content Interaction

Statement	Mean
L2CQ1 Do you think that the synchronous activities (i.e. online discussion) could offer immediate assistance?	3.89
L2CQ2 Do you think that the asynchronous activities (i.e. assignment) could offer immediate assistance?	3.71
L2CQ3 Do you think the activities could improve the understanding of subject-matter?	4.03
L2CQ4 Do you think the activities in online learning could improve your critical thinking skills?	3.96
L2CQ5 Do you think you can use relevant knowledge wisely in the learning process?	4.00
L2CQ6 Do you feel that the ease of online content is important?	4.27
L2CQ7 Do you feel that it is important to get an overview of the content before the class begins?	4.49

Descriptive statistics of the survey items containing the mean scores for the learner-to-content interaction are presented in Table 10. From Table 11, it reported that most of the participants feel that it is important for them to get a preview of the content before the class starts. In terms of the online content utilised in teaching the subject-matter,, many of them feel that the ease of the online content is also important. The third highest mean score from Table 11 indicated that the participants thought that the learning activities could improve their understanding of the subject. From the table, it could also be seen that the participants' perception whether asynchronous activities could offer immediate assistance, was ranked the lowest compared to other items when assessing learner-to-content interaction.

Conclusion

Summary of Findings and Discussion

The current study explored group engagement in online learning through the four stages of group development. From the above analysis and discussion, it can be seen that learners have high group online engagement throughout all the four stages, namely forming, storming, norming and performing.

It is revealed that in the forming stage, for learner-to-learner interaction, participants prefer to be in a group where they choose their own team members, and they are motivated to complete their tasks when they get support from their group members. Not only that, for

social interaction, group work allows learners to look at other people's viewpoints. Through group activities, learners are more engaged in online class as they can interact with one another, meet new friends and be able to solve problems together. This finding is in line with the study by (Sazali et al., 2022).

In the next stage, which is the storming stage, the highest mean score is learners learn how other students validate their opinions through group work. With the strategy of group work, learners can learn more from other students hence adding more knowledge and they also can learn and improve their communication skills from others in the group.

The norming stage looks at learner-to-instructor engagement and the results showed that participants feel that the teaching style used by educators would require students' active participation in online class. They also agree that the online platforms used by educators are effective and convenient for them and educators also use more than two communication tools to keep in touch with the students. This is supported by the findings of Nawi et al (2021) which noted that one of the key factors for learners to be engaged in online class would be the online platforms that educators chose especially when providing feedback. This is also in line with the findings as learners feel that educators were able to provide clear and positive feedback to the learners in online learning.

Finally, in the performing stage, results were divided into zone of proximal development and learner-to-content interaction. Findings indicated that through group work, learners learn negotiation skills especially when they delegate tasks among themselves. They also improve their listening and problem-solving skills when they interact with each other in the group. To the learners, it is important for them to get an overview of the content so that they can study the content before the class begins. This is supported by research done by (Martin & Bolliger, 2018).

Pedagogical Implications and Suggestions for Future Research

Group work is shown to have a positive impact towards learning as it facilitates students in studying and helps them to complete tasks given to them with the help of group members. During online class, group members help learners to have high engagement due to the support they get from group members. Therefore, educators are encouraged to utilize group work strategies to assist learners in studying.

Although there are benefits of group work in online class, group work strategy does open rooms for improvements. Fredricks et al (2016) mentioned that even though group work is beneficial for students, there could be problems such as unequal distribution of duty and contribution when completing tasks given to them (Nawi et al., 2021). Thus, group work can be a disadvantage if there is no clear instruction or guidelines given from the instructors.

Therefore, further studies should be conducted to explore the methods in enhancing the effectiveness of group work in online class. Instructors should prepare a clear guideline to be given to the students so that the students can establish clear goals and roles among their group members before they start working on their group work. This is so problems such as free riders, lack of unity and cooperation from team members can be overcome in the future.

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