

Stages in Group Work: Is There A Relationship Among Them?

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Abstract

Group work increases learning by allowing students to study and complete assignments with the assistance of their group members. However, it may result in an unequal distribution of obligations and contributions. Teams have long been used in education to teach students how to be productive team members. Today, educators prioritise the creation of collaborative learning environments, replacing lecture-style classrooms with student-centred ones. The goal of this study is to investigate learners' perceptions of learning strategies based on the four stages of Tuckman's Model, which include the forming, storming, norming, and performing stages. This is a quantitative study conducted online using survey methodologies, and the sample was drawn from Malaysian public universities. The survey's instrument was divided into four major sections. A survey of 231 Malaysian higher education students found that the performing stage of group work learning has high evaluation scores, indicating that despite uncertainties in the forming, storming, and norming stages, group members united to achieve the objectives. The storming stage had a positive relationship with all three stages, with a strong positive relationship between storming and forming. Overall, learners were satisfied with each stage. The current study indicates that future research should be conducted to discover ways for improving the effectiveness of group work in teaching and learning based on a pedagogical approach.

Keywords: Group Work, Forming, Storming, Norming, Performing, Perception Introduction

Background of Study

Group work has been found to have a good impact on learning since it helps students study and finish tasks assigned to them with the support of group members. (Nawi et al.,

2022). Although group collaboration has advantages in online classes, it also leaves opportunity for growth, according to Fredricks et al. (2016), while group work is useful for students, there may be issues such as unequal distribution of duty and contribution while completing tasks assigned to them (Nawi et al., 2021). Tuckman's theory is well-supported and illustrated in terms of forecasting specific events and the approximate stage of development of such an occurrence. However, the theory failed to specify the students' learning outcomes at each stage. As Nawi et al. (2022) propounded, learners have high group online engagement throughout all the four stages, namely forming, storming, norming and performing.

Teams and teamwork have long been utilised in business, and much has been written about the issue over the years, notably analysing the formation and usage of teams in college to assist educate students to be productive members of work teams. Pedagogy in many contexts has changed over time. The paradigm of learning has evolved from individual account to community endeavour. Nowadays, educators place a greater emphasis on fostering a collaborative learning atmosphere. Collaborative learning environments have arisen in the spirit of replacing traditional lecture-oriented classrooms with student-centred ones. As Ferdous et al. (2019) propounded, group work is a common strategy of collaborative learning, practiced both inside and outside the classroom. Irrespective of the subject matter, learners, either being assigned by the teachers or being self-employed, tend to carry out group work. It is evident that often learners experience various difficulties when they are involved in group work outside rather than inside the class. The study discovered that the first issue arose from dealing with a hectic schedule. Typically, such an issue arises during the formation stage. Tuckman (1965) proposed that group members do not know each other at the start of the group's formation. They have difficulty reaching individuals and settling time through coordination. Students reported having trouble establishing individual opinions. The phenomenon is caused by the prevalence of individual skill in a group.

According to Freeman and Greenacre (2011), students are vulnerable to issues due to a lack of equal engagement in the teamwork journey. To ensure individual participation, group work practices must be implemented. It is also critical to acknowledge the difficulties that students frequently face while attempting to complete a successful group project. Working in groups also promotes a better knowledge of the material (Sansivero, 2016). Furthermore, it provides a channel for students to tackle challenges, provided that they receive frequent assistance from group members. The general scenario for collaborative learning involves students participating in small group activities in which they share information and experience. To elaborate, collaborative learning is characterised by positive interdependence, in which students share the assumption that an individual's higher performance in a group ensures the overall group's better performance (Johnson et al., 2014).

A study explored the practicality of conducting online group work by assessing students' engagement through four group developmental stages, namely forming, storming, norming, and performing. This quantitative study included 141 undergraduates from Malaysia's public higher learning institutions (Nawi et al., 2022). As a result, current study shows that additional research should be performed to investigate techniques for improving the effectiveness of group work in online classes and face-to-face. Before beginning group work, instructors should produce a clear guideline to be delivered to the students so that they may set defined goals and duties among their group members. This is done in order to avoid future issues such as free riders and a lack of unity and collaboration among team members. (Nawi et al., 2022).

The motivation behind conducting research on group work dynamics from the Tuckman's model perspective lies in the pursuit of enhancing team performance and effectiveness. The current ever changing scenario indicates the various complexities and challenges like diverse student backgrounds, communication issues, skills disparities and varying commitment levels to name a few, that a group has to manoeuvre when coming together and operate. By delving into the stages usually involved in group work, researchers seek to uncover insights into how teams can effectively progress through the stages, identify potential obstacles and challenges, and ultimately find strategies to optimize teamwork. Such research can provide valuable guidance for team leaders, educators, and organizations aiming to build cohesive and high-performing groups, thereby improving collaboration, productivity, and overall outcomes in various professional and academic settings.

Statement of Problem

Studies have reported that group work has been widely used as a classroom activity to encourage interactions. The study by Pardede (2020) found that group work is one of the most effective techniques to integrate learning skills, as it also allows students to learn from and teach each other and could save some preparation time. Situmorang (2021) states that group work has become an integral part of 21st century education methodology in teaching and learning as it requires the responsibility of every person in a group. If one does not work well, group failure may occur. However, issues may arise in the group work stage, which will lead to resentment and a loss of motivation (Wong et al., 2022).

The forming stage involves testing interpersonal and task boundaries, with group members being cautious and reliant on the leader, avoiding power, control, and preference issues (Frances, 2008). Leadership emerges as a starting point for group structure, but members in the forming stage often rely on the leader, experience anxiety, and have concerns about inclusion (Wheelan & Conway, 1991). Many students find it difficult to build well-structured teams as a result of their initial lack of group formation, and the effectiveness of groups depends mainly on the distinctive contributions of each member (van Hattum-Janssen's, 2009). Establishing teaching presence, meanwhile, plays a crucial role in developing students' comprehension and visual understanding of the topic during the forming stage. Although Smith (2011) claimed that group work in the online environment is more challenging than face-to-face interactions, it is still possible that issues with unevenly delegating responsibilities, free riders, a lack of unity, and a lack of participation exist in group work (Fredricks et al., 2016; Nawi et al., 2021).

Group conflicts occur when a group enters the storming stage (Tuckman, 1965), characterized by a lack of cohesion, polarization, confrontations, and internal dissensions (Bonebright, 2010; Wheelan, 2009; Wheelan & Conway, 1991). These conflicts prompt members to challenge established norms and seek shared goals, norms, and values, essential for the group's progress and completion of tasks. According to Shonk (2020), there are three types of potential conflicts that can arise during group work: task conflicts, which are miscommunications related to the assigned task; relationship conflicts, which refer to personality and working style differences; and value conflicts, which can occur as a result of team members' differences and values. However, Chou et al. (2011) said that conflicts in the storming stage are often considered interpersonal relationship conflicts rather than task conflicts. Meanwhile, Rahmat (2021) argues that group work conflict can be beneficial since it teaches students how to strengthen their communication and negotiation skills with team members.

The stage of norming is when we can see a change from a rigid and exclusive leadership style to one that is more open and shared. To avoid devolution at this point, the team must have the trust that is necessary for effective leadership. (Vaida et al., 2021). Smith (2008) discovered that many of the online groups in her study were unable to build mutual trust and progress toward understanding, which prevented them from engaging in conversation that would have allowed them to benefit from collaborative learning. Working in groups requires a strong sense of trust. By making a firm commitment, trust can be cultivated. A group must also have mutual trust in order to function, as students who depend on one another show higher levels of cognitive engagement and participate more actively in group projects (Poort et al., 2022). In order to increase involvement, Poort et al. (2022) recommended fostering trust among group members even before group activity started. Additionally, trust should be included in the group work process at all phases. Therefore, members of a group that successfully manage conflicts during the storming stage exhibit high levels of commitment, trust, and cooperation (Wheelan, 2009).

According to Bonebright (2010), Miller (2003), and Tuckman (1965), groups in the performing stage place a strong focus on functional roles, task activities, task performance, and issue resolution. According to Vaida et al. (2021), in the performing stage, team cohesion is maintained and excitement is observed. Prior norms are used for motivation and high performance. However, not all teams reach this stage, resulting in unexpected results. Conflicts are still present, but the degree of damage has been greatly reduced through more effective management. Communication and negotiation help to neutralize the potential for harm. This is in line with Mohd Rick et al. (2022), who stated that social presence is highly beneficial for interaction, communication, and collaboration among group members during storming and norming, which has a direct positive impact on the performing stage.

Hence, this study is significant in examining how learners perceive their usage of learning strategies to improve the effectiveness of group work.

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 the forming stage in group work?
- How do learners perceive the storming stage in group work?
- How do learners perceive the norming stage in group work?
- How do learners perceive the performing stage in group work?
- Is there a relationship between storming stage and all the stages in group work?

Literature Review

Disadvantages of Group Work

Even with multitudes of potential benefits of group work, challenges such as uneven participation and diverse competencies, deliberate structural design, role clarification, grade assignment and effective time management, gender preference emerge as critical strategies to optimize collaborative outcomes in academic settings. Different learning aptitude may result in different team members being left behind and ultimately acquired little or nothing from the group discussion (Appavoo et al., 2018). Transitioning to the complexities of effective group work, Shen and Chen (2023) recognized its educational potency alongside inherent shortcomings stating that group dynamics can be undermined when members prioritize consensus over critical evaluation, often rooted in insufficient leadership or

individual egocentrism. Patterson (2022) as quoted in Kamarudin et al. (2023) posit that Tuckman's Model, while informative, may not seamlessly translate into practice due to the fluidity of human behaviors and instincts. This fluidity results in overlapping stages and potential discord within the model, leading to competition and varying levels of participation (Rahmat, 2020) as "simply assigning students to teams without providing any support or guidelines from the instructor will not necessarily result in effective teamwork" (Tucker et al., 2016). One member can either rise to dictatorial reign in controlling the direction of the discourse or refrain from taking part due to conflicting personalities (Svolik, 2009).

Similarly, Roskosa and Rupniece (2016) as cited in Samad et al. (2023) highlight the delineated various group work drawbacks, encompassing time management challenges, an inability to accommodate diverse viewpoints, incongruous task allocation resulting in differing workloads, and a deficiency of motivation for active participation, participation disparities, communication obstacles, and varying competencies among group members as impediments to effective collaboration. There is also a prevailing sentiment among students concerning uniform group work grades irrespective of individual contributions, leading to hesitancy in pursuing courses solely dedicated to refining collaborative skills (La Beouf et al., 2016). Hasan's (2023) research on group work assessment underscored the significance of establishing distinct roles within groups, encouraging independent discussions about responsibilities rather than imposition, while also highlighting the pivotal role of recognizing scheduling as a key factor in alleviating time-related stress and workload pressure, which often hinder students from participating in collaborative projects. In addition, Murphy et al. (2018) highlighted gender-related preferences for teaching methods, with males showing greater agreement on movies, discussions, hands-on activities, and student presentations.

Advantages of Group Work

The multifaceted benefits of group work or team work within the realm of higher education have been well-documented as it is an integral 21st century skill. This paper elucidates the positive outcomes of collaborative learning through group work activities, highlighting its impact on student engagement, cognitive processes, and overall educational experience. Group work and study groups have become integral to higher education, proving advantageous for students' academic performance and learning outcomes (Chen & Yang, 2019; Jackson et al., 2014). Extensive research attests to the constructive influence of group work on student engagement, contribution levels, cognitive load management, and overall academic performance (Costley, 2021). This pervasive trend has led to widespread adoption of group work as a pedagogical strategy by educators and practitioners (Croy & Eva, 2018; Chen & Yang, 2019).

Kirschner et al. (2018) and Poort et al. (2019) have also identified that active participation in collaborative learning settings yields cognitive advantages, particularly for those who contribute significantly. Leopold and Smith (2019), Salas et al. (2008), and Mohd Rick et al. (2022) also highlight the positive influence of active participation regarding cognitive presence within groups, encompassing integration, exploration, and resolution of shared ideas among group members for a more positive group experience. Engaging in group dynamics cultivates individual competencies such as effective communication, maturity, and organizational prowess, thereby enriching the collaborative learning encounter (Guttenberg, 2019; Zheng et al., 2019). Assigning students the role of elucidating specific subjects to peers helped to elevate understanding and pique interest (Hefter & Berthold, 2020) and this must be done with proper support or guidelines to result in effective teamwork (Jaiswal et al.,

2021). Notably, the critical aspect of group work lies in social interaction, facilitating open idea exchange, collaborative task completion, and enhanced learning capabilities (Zaharuddin et al., 2022; Hennebry & Fordyce, 2018). This helps to foster a more captivating and efficient learning milieu.

Past Studies on Group Work

Teams go through stages of development. The most used framework for a team's stages of development was introduced by Tuckman (1965). Teams must comprehend their team development if they are to function at a high level. Despite the fact that numerous authors have added to and modified Tuckman's ideas, his descriptions of Forming, Storming, Norming, and Performing offer a helpful framework for analysing your own team.

Orientation and understanding period are part of the formation stage. During this phase, there is a lot of uncertainty, and individuals are seeking authority and leadership. A member who commands respect or demonstrates knowledge might be considered to assume leadership. There was little consensus on team goals other than what was communicated by the leader. Individual duties and tasks are not clearly defined, and as members come to know one another, most interactions are social.

The hardest and most crucial stage to go through is the second storming stage. Conflict and rivalry are prevalent throughout this time as unique personalities start to develop. Members may not agree on team objectives, and cliques and subgroups may develop around dominant individuals or points of agreement. The key to succeeding through this stage is that everyone involved must accept individual differences and resolve disagreements on the team's tasks and objectives. Long-term issues may arise if conflicts are not resolved. There are a lot of factors that can spark the differences between team member. For example, the education background differences of each individual, their business background and even the gender. Studies from Prytherch et al. (2012) divide the class into three (3) group with different business background, first is mixed gender group, female only group and male only group. The male network shared more information than the other two networks overall, even though all networks claimed that they received a similar amount of proposals at their meetings (Male: M Information=16.75; Female: M Information=6.50; Mixed: M Information=12.00). Male: M Disagreement=3.75, Female: M Disagreement=1.00, Mixed: M Disagreement=2.50. Additionally, the male network exhibited more conflicts than the other networks. When compared to the two other networks, they also demonstrated relatively high levels of solidarity (M Solidarity=14.75), agreement (M Agreement=11.00), and tension release (M Tension_Release=10.75), which may have also played a role in the positive outcome. Male networks are shown to have the lowest overall attendance of the networks, despite the fact that research to far suggests they exhibit the most favorable behaviors helpful to group development.

The third stage in team development is known as the Norming phase. During this phase, team members engage in the process of resolving any discrepancies that may have arisen between their individual expectations and the actual experiences encountered by the team. The team members are experiencing a growing sense of acceptance towards one another, acknowledging that the diverse range of ideas and experiences contributes to the team's strength and enhances the quality of its output. Constructive criticism is not only feasible but also encouraged. Individuals begin to develop a sense of belonging inside the team and derive satisfaction from the heightened level of group unity.

During the performance stage, cooperation and consensus have been well-established and the team is mature, structured, and operating. Members are dedicated to the team's goal, and the structure is clear and solid. Conflicts and issues still arise, but they are resolved positively. Group consensus is used to make important decisions. Smaller choices might be assigned to specific people or groups within the group. Unity and dedication are strong. The group may take part in enjoyable and sociable activities. The group is concentrated on reaching its objectives and resolving issues. Once the team is already mature and structure the last stage is the adjourning stage which in this stage, most of the team's goals have been accomplished. The emphasis is on wrapping up final tasks and documenting the effort and results. Adjourning is also referred to as Deforming and Mourning.

Adjourning is arguably more of an adjunct to the original four-stage model rather than an extension - it views the group from a perspective beyond the purpose of the first four stages. According to research conducted by Riebe et al. (2010), a survey was distributed to second-year students in the university's Bachelor of Engineering programme. The survey received a response rate of 78% from the total number of students.

The initial inquiry requested students to evaluate their encounter with collaborative efforts, specifically emphasising the attitudes cultivated during the shaping and storming phases of Tuckman's model. For instance, the implementation of goal planning, the formulation of a mission statement utilising SMART objectives, and the establishment of team rules. The concept of establishing team standards was initially presented in the unit, resulting in a notable positive influence on the overall student experience, as indicated by a substantial agreement rate of 93 percent.

The second inquiry required students to evaluate general skills, such as active listening and conflict-management abilities, cultivated during the unit and exhibited in the norming and performing phases of Tuckman's approach.

The third question inquiry requested students to provide a general assessment of their learning encounter with the Tuckman model. The students provided the following observations when providing feedback on the concluding inquiry regarding their progression throughout the team development procedure.

Furthermore, apart from the observations made by students regarding team growth utilising Tuckman's model, there were also general remarks that demonstrated an increased recognition of interpersonal strengths and limitations. The students provided feedback regarding the successful execution of various team-related competencies, including the establishment of team standards, the formulation of a mission statement, and the demonstration of respect for differing viewpoints. The students also expressed the need for greater development in team skills, namely in the areas of time management and inclusive decision making. The deliberate instruction of team skills and processes has proven to be successful in enhancing students' understanding, ultimately fostering the growth of enduring and adaptable team skills.

In Brannen et al. (2021), it studies the effects of group work in the teaching and learning environment across various programmes and courses. The study not only emphasised the benefits of collaborative work but also delved deeper into the impact of a group work contract on students' engagement in group work activities. In this study, a sample of undergraduate students was divided into two groups: one group consisted of 168 students enrolled in the face-to-face format of the Fundamentals of Nutrition course, while the other group consisted of 105 students enrolled in the online version. These students were then asked to participate in an online survey. The results of the study indicated that the

participants consistently reported positive experiences with group work throughout their academic programme. These positive experiences were found to be even more pronounced when the participants had a group work contract in place at the beginning of the assignment. In addition, it has been found that pupils were able to get improved academic performance through engaging in collaborative work.

Conceptual Framework

Group work benefits the team members in several ways. To begin with, group interaction allows team members to improve their communication skills. According to Rahmat (2020), group collaboration allows team members to learn from one another. The conflict is also labelled as “storming” by Tuckman (1965) and this stage enhances the team members’ problem solving skills. Figure 1 shows the conceptual framework of the study. With reference to figure 1, this study explores the relationship between storming stage with forming, norming and performing stage.

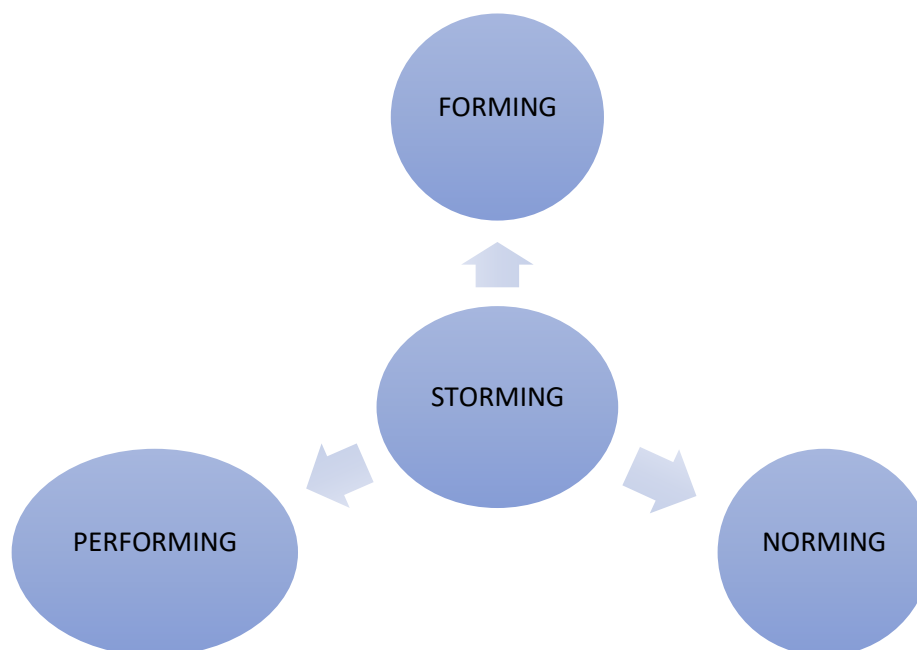


Figure 1: Conceptual Framework of the Study- Exploring Stages in group Work

Methodology

This quantitative study is done to explore group interaction. A purposive sample of 231 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Tuckman (2016) to reveal the variables in table 1 below. The survey has 4 sections. Section A has items on demographic profile. Section B has 7 items on the forming stage. Section C has 6 items on the storming stage. Section D has 8 items on the norming stage and section E has 8 items on performing stage.

Table 1:

Distribution of Items in the Survey

SECTION	STAGE	ITEMS
B	FORMING	7
C	STORMING	6
D	NORMING	8
E	PERFORMING	8
		29

Table 2-

Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.879	29

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .879, 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

This section describes the respondents' backgrounds based on their answers to four demographic questions. The survey results were examined using descriptive analysis based on gender, discipline, level of education, and semester. For all of the findings, pie charts illustrate the frequency and percentage for each demographic profile.

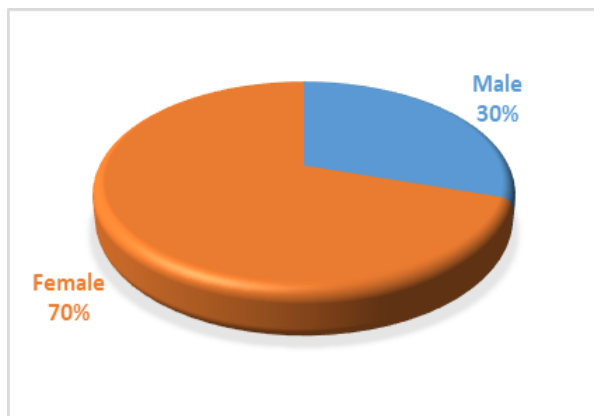


Figure 2: Percentage for Gender

Figure 2 shows that more than half of the respondents are from the female population (70.00%), and 30.00% from the male population.

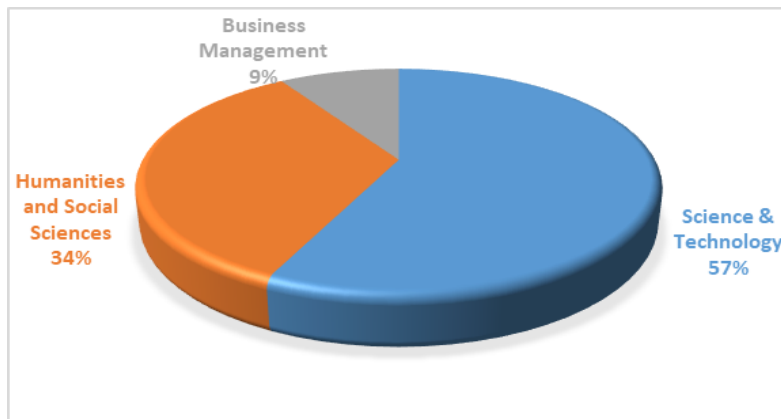


Figure 3: Percentage for Discipline

Figure 3 shows that 57.00% of respondents were from Science and Technology, 34.00% from Humanities and Social Science, and 9.00% were from Social Sciences discipline.

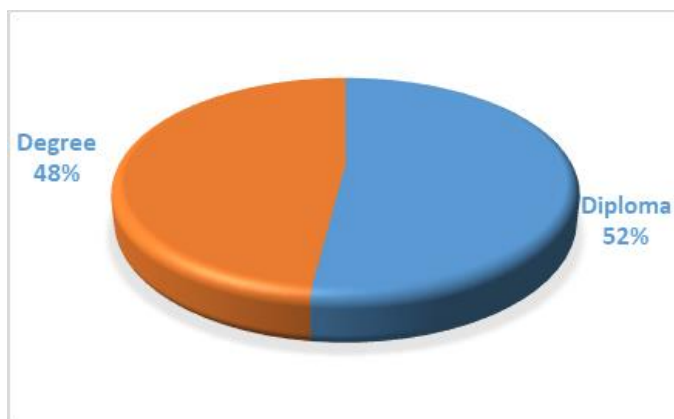


Figure 4: Percentage for Level of Education

Figure 4 shows that most of the respondents were diploma level with 52.00% and degree level with 48.00%.

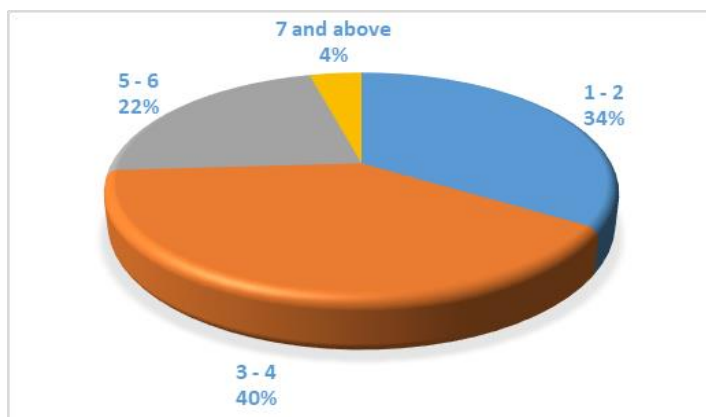


Figure 5: Percentage for Semester

Figure 5 shows that 40.00% of respondents are in semesters 3-4, 34.00% were from semesters 1-2, 22.00% were from semesters 5-6, and 4.00% were from semesters 7 and above.

Findings for Forming Stage

This section presents data to answer research question 1, How do learners perceive the forming stage in group work?

Figure 6 shows that the highest mean score for findings in the forming stage is 4.20. This indicates that the learners believe that when creating group works, team members should be assigned particular responsibilities, and the goals and tasks that must be completed should be specified. The second-highest mean score is 4.00. Most learners believe that they strive to establish clear procedures or protocols at first to make sure that everything is in order and goes well. Next, with a mean score of 3.80, learners are thrilled and delighted to be a team member. Although they are unsure of the project's objectives and issues, the learners demonstrate positive results in their belief in group work. Even though it initially appears as though little is being achieved with the project's goals, the learners also show positive results in their belief in group work, with a mean score of 3.30. The two statements with the lowest mean scores are, respectively, "team members are afraid or do not like to ask others for help," which has a mean score of 2.90, and "team members do not trust the other team members," which has a mean score of 2.70. Seeing that many learners disagree with the statements, both of them have negative implications.

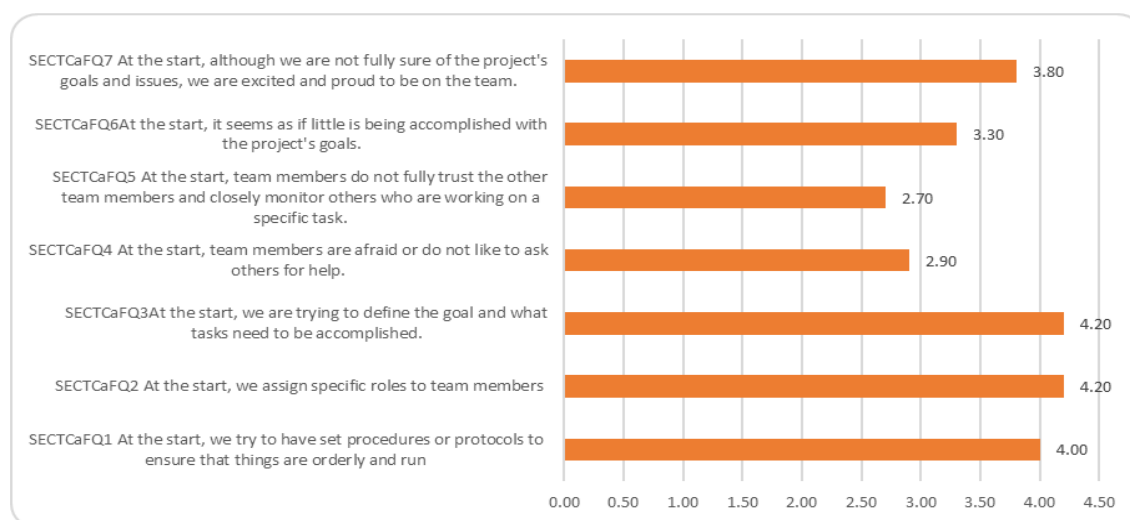


Figure 6: Mean for Forming Stage

Findings for Storming Stage

This section presents data to answer research question 2, How do learners perceive the storming stage in group work?

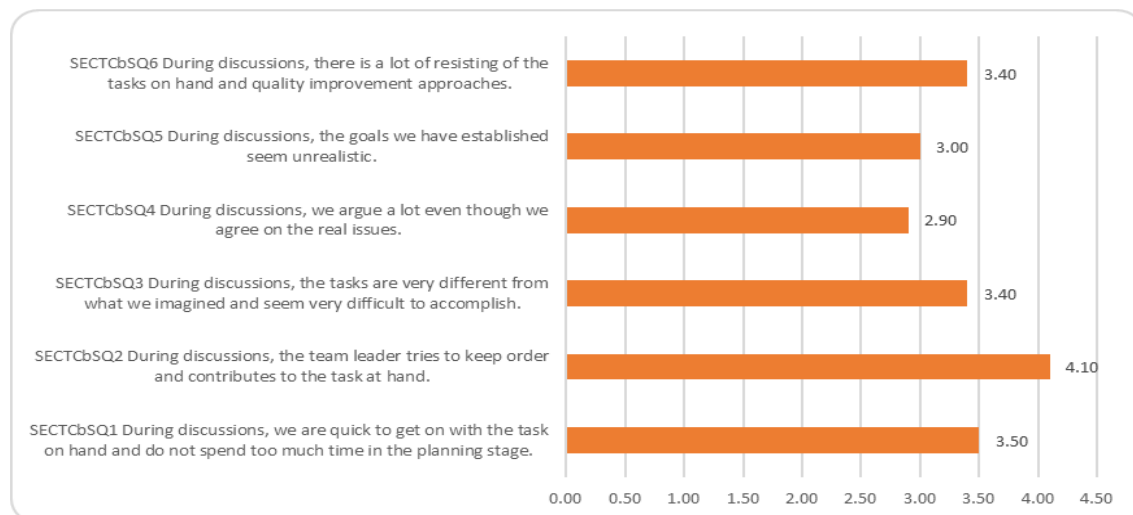


Figure 7: Mean for Storming Stage

This section delves into the findings of the storming stage, a phase primarily characterized by interpersonal conflicts and polarization among group members. The storming stage represents the juncture at which the group endeavours to establish its member roles, governing principles, and indicators of both short-term and long-term productivity. This phase commonly serves as fertile ground for clashes of ideologies and viewpoints, contradictory personalities, confrontations in discourse, and disharmony. Illustrated in Figure 7 are the outcomes portraying how learners perceived the storming stage. Evidently, the most notable mean score ($M=4.1$) was attributed to the assertion "During discussions, the team leader tries to keep order and contributes to the task at hand". Even within a stage prone to dissension, it appears that the outcomes signal a notable acceptance of directives and assigned roles or tasks dispensed by the leader. Concurrently, it can be inferred that the leader exhibits a measure of competence in guiding and overseeing the group. The spirit of collaboration and the attainment of the immediate task are encapsulated in the second highest mean ($M=3.5$) for the item "During discussions, we are quick to get on with the task on hand and do not spend too much time in the planning stage...". Despite the norm being the emergence of personal or professional clashes among group members during this stage, the findings propose their cognizance of the necessity to focus on task execution, coupled with a consideration for efficient time management. Conversely, the item with the lowest mean pertains to the statement "During discussions, we argue a lot even though we agree on the real issues.", registering a mean of $M=2.9$. This could be construed as an indication that group members may have encountered disagreements in discourse that hold negative implications or impede the progress of collaborative work. Nevertheless, the fact that this particular item yielded the lowest mean underscores the importance of addressing its impact on group dynamics and productivity.

Findings for Norming Stage

This section presents data to answer research question 3, How do learners perceive the norming stage in group work?

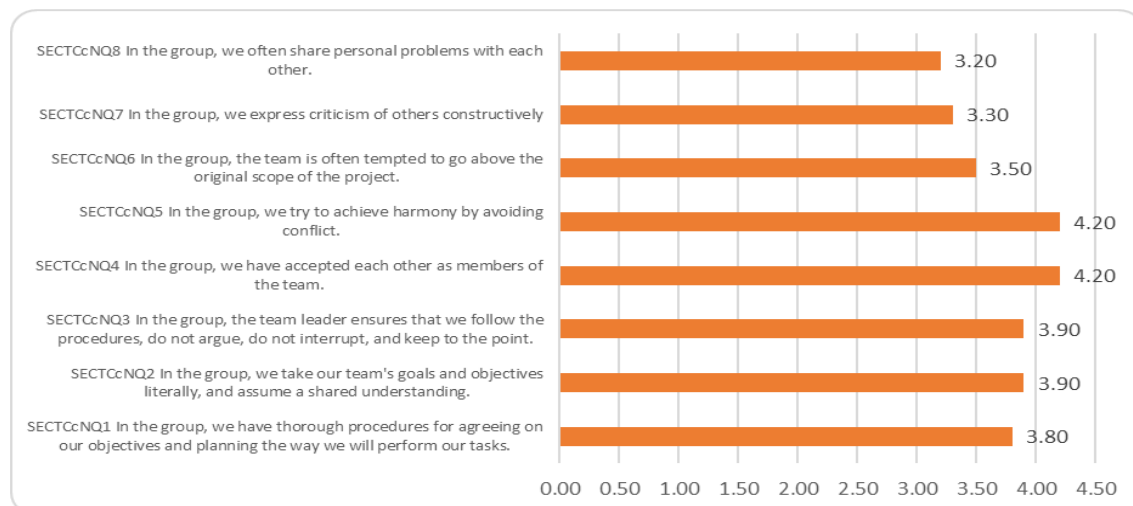


Figure 8- Mean for Norming Stage

The average outcomes for each measurement during the norming stage are displayed in Figure 8. The highest mean state is 4.20, which implies that once learners have completed the formation stage, they should attempt to prevent disagreement throughout the norming stage. In addition, everyone in a group must view each other as a teammate and fellow member. The second-highest mean score is 3.90. Most learners believe that in establishing a good understanding among the group members the team leader itself must play the main role in controlling everyone. Where every member must follow the procedures and keep the respect among each other. A crucial aspect to consider is the necessity for learners to disengage from their individual perspectives and prioritise the collective viewpoint and objectives of the group. Furthermore, based on an average score of 3.80, it is widely acknowledged in the field of education that the implementation of well-defined processes or protocols at the outset is crucial in ensuring the smooth and orderly progression of learning activities. Despite the presence of an emphasis method within the group, the team occasionally exhibits a tendency to exceed the initial scope and project objectives, as indicated by an average score of 3.50. The two lowest statements, with mean scores of 3.30 and 3.20, correspond to the aspects of constructive criticism and learners' inclination to communicate problems with one another. It appears that the process of learning is encountering challenges in terms of receiving criticism and incorporating the perspectives of other group members. In instances where individuals encounter difficulties, they may exhibit a deficiency in their inclination to openly communicate the challenges they are confronted with to their fellow group members.

Findings for Performing Stage

This section presents data to answer research question 4, How learners perceive the performing stage in group work?



Figure 9: Mean for Performing Stage

Figure 9 explains the mean for eight items of the performing stage in group work. One item had the highest mean at 4.3, which learner believes, in the end, they get a lot of work done in performing the group work. With a mean of 4.2 for two items, learners enjoy working together and have a fun and productive time even though there is a group problem. Next, with mean 4.1, learners believe that they fully accept each other's strengths and weakness as they are all in it together and shares responsibilities for the team's success or failure while the team leader needs to perform as democratic and collaborative to encourage the group members. Although with the second lowest mean at 3.90, the learner still believes there is a close attachment at the end of performing group work. However, with a mean of 3.60, learners indicate they do not have fixed procedures as they just make them up as the task or project progresses in performing group work. Overall, it shows that in the end, without fixed procedures learners believes a lot of work can be done as long as the team is able to go through the problem, work together, have fun, be productive, and be willing to accept members' weakness and strength and leader be democratic and collaborative during performing stage of group work

Findings for Relationship between Storming Stage and all the stages in Group Work

This section presents data to answer research question 4, Is there a relationship between storming stage and all the stages in group work?

To determine if there is a significant association in the mean scores for all stages in group work data is analysed using SPSS for correlations. Results are presented separately in table 3, 4, and 5 below.

Table 3:
Relationship between Storming and Forming

Correlations

		storming	forming
storming	Pearson Correlation	1	.503**
	Sig. (2-tailed)		.000
	N	231	231
forming	Pearson Correlation	.503**	1
	Sig. (2-tailed)	.000	
	N	231	231

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

Table 3 shows there is an association between storming and forming. Correlation analysis shows that there is a high significant association between storming and forming ($r=.503^{**}$) and ($p=.000$). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between storming and forming.

Table 4:
Relationship between Storming and Norming

Correlations

		storming	norming
storming	Pearson Correlation	1	.382**
	Sig. (2-tailed)		.000
	N	231	231
norming	Pearson Correlation	.382**	1
	Sig. (2-tailed)	.000	
	N	231	231

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

Table 4 shows there is an association between storming and norming. Correlation analysis shows that there is a low significant association between storming and norming ($r=.382^{**}$) 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 storming and norming.

Table 5:
Relationship between Storming and Performing

Correlations

		storming	performing
storming	Pearson Correlation	1	.156*
	Sig. (2-tailed)		.018
	N	231	231
performing	Pearson Correlation	.156*	1
	Sig. (2-tailed)	.018	
	N	231	231

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5 shows there is an association between storming and performing. Correlation analysis shows that there is a low significant association between storming and performing ($r=.156^*$) 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 storming and performing.

Conclusion

Summary of Findings and Discussions

According to the current study, various results were obtained for these four stages. Despite early ambiguity about project objectives and challenges, learners believe in assigning specified jobs as well as creating goals and tasks for group work during the formation stages. Based on the findings from the conducted studies, it is evident that the stages of storming and forming hold greater significance in comparison to the subsequent stages of norming and performing. The mean score of the storming and forming stages was found to be significantly lower when compared to the norming and performing stages. According to Tuckman's (1965) research, the second stage of group development, known as storming, is considered the most challenging and pivotal phase. It is during this stage that conflicts and rivalries frequently arise. However, once individuals successfully navigate this particular phase, subsequent developments will proceed in a typical manner. Based on the conducted correlation studies among three correlation deployments, it was found that the relationship between forming and storming exhibited the highest level of statistical significance, with a correlation coefficient of $r = .503^{**}$ and a p-value of .000. Despite encountering initial challenges, the individuals maintain a positive outlook towards collaborative efforts. The capacity of a leader to effectively guide and oversee a group's activities, demonstrate proficiency in task completion, and exhibit strong time management skills is crucial for the survival of the group during the forming and storming stages. Aside from that, the findings for the norming stage revealed that learners believe a team leader is essential for group comprehension and respect. They must disengage from individual perspectives in order to prioritise the group vision. Furthermore, in storming stage, the data shows that virtually always students get a lot of work done in the end while storming group work. According to the statistical inferences, there is a substantial positive association between storming and all stages of group work. According to Rahmat (2020) research, team members generally desired to prevent conflicts or disagreements by being accommodating to embrace new ideas without reservations.

Based on a survey of 231 Malaysian higher education students on their experiences with group work learning, it was observed that the performing stage has charted many high means for many of the items on evaluation within this stage. This may mean that even though there have been uncertainties in the forming stage, disagreements in the storming stage and some form of consensus in the norming stage, the group members came to unison in carrying out the tasks and performed collectively to achieve the group work targeted objectives. Another point worth mentioning is the findings on the storming stage relationship with the other stages. It was discovered that there exists positive relationship between storming and all the three stages of group work i.e. forming, performing and norming. However, out of the three, the storming and forming stage has recorded a strong positive relationship. Overall, it is clear that the learners are content with each stage of their group work and that the forming, norming, and performing stages have an impact on their task completion proficiency, as attested by the storming stage.

Pedagogical Implications and Suggestions for Future Research

Findings shows that, it is clear that the learners gained a great deal from all stages of group work. They are satisfied with the process of forming, norming, and performing, and there is a positive relationship with their storming stage. The educator should place a high emphasis on group work activities that integrate teaching and learning. Additional study should be conducted to acquire a more in-depth understanding, which can be accomplished through rigorous mixed methods and qualitative approach and techniques. The survey and observation from the instructor's or educator's point of view and perspective should be regarded seriously in order to achieve a result on the positive influence of group work in learning and teaching pedagogical methods.

This study offers valuable insights in various domains by highlighting the importance of understanding how teams evolve and mature, shedding light on the stages of forming, storming, norming, performing, and adjourning. Such knowledge is pertinent to educators and team leaders in universities and organizations, helping them develop strategies to facilitate smoother transitions through these phases and build more effective teams. With the information discovered in this research, the development of interventions and training programs aimed at improving teamwork skills and addressing common challenges encountered in groups can be designed and implemented. Additionally, the findings can guide the design of assessment methods that better evaluate individual contributions within teams. Overall, a research study on group work dynamics through Tuckman's lens can empower both academia and industry with actionable insights to enhance collaboration, productivity, and the overall success of teams in a wide range of contexts.

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