

Exploring The Relationship of Components in Group Dynamics: A Case Study

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Abstract

Group dynamics play a crucial role in the success and effectiveness of any group or team. Understanding the relationship between the different components within a group is essential for effective collaboration, decision-making, and overall group performance. The objective of this study is to explore the perception of students of the dynamics of a group in different stages of work based on Tuckman's model, which is forming stage, storming stage, norming stage, and performing stage. The study utilizes quantitative data through surveys. A total of 167 students from the Centre of Foundation Studies, UiTM Dengkil participated in the survey. In general, the findings revealed that good leadership practice, effective communication among group members, clearly defined roles among group members, and group cohesion serve as critical factors in facilitating effective collaboration in completing the group work assignment. These findings provide valuable insights for educators seeking to enhance students' group dynamics and optimize their performance. By understanding the relationship between components within group dynamics, students can also develop strategies to foster effective leadership, communication, role allocation, and cohesion within a group.

Keywords: Tuckman's Model, Group Work, Forming, Storming, Norming, Performing

Introduction

Background of Study

Group work assignments are a common feature for students either in school or higher institutions. For example, foundation students in the Centre of Foundation Studies, UiTM

Dengkil have a minimum of six courses per semester and for each course, they are normally required to fulfill at least one group work assignment. This group work involves students grouping together to collaborate and accomplish a shared goal or task. The success of group work assignments depends on the dynamic of the group that can be achieved through effective teamwork, which requires individuals to work together cohesively, communicate effectively, and leverage their collective skills and knowledge. Previous studies by Johnson (2007) also emphasized that when group dynamics are effectively managed, group performance and learning outcomes will ultimately be enhanced.

However, working in a group is not always a smooth process. Various challenges can arise, such as differences in perspectives, communication barriers, conflicts, and the need to establish roles and norms. According to Rahim (2002), when individuals within a group have different perspectives, conflicts may arise. Managing and resolving these conflicts is crucial for maintaining group cohesion and progress. Finkelmann (2017) also reported that differences in perspectives can affect effective communication within groups, leading to misunderstandings and reduced collaboration.

To navigate these challenges and facilitate productive group dynamics, the application of a theoretical framework becomes essential. Tuckman (1965) introduced a framework that outlines the sequential stages that groups typically progress through in their development. The stages are forming stage, storming stage, norming stage, and performing stage. In general, Tuckman's concept helped those who worked in groups to comprehend and foresee the normal patterns of group formation. It offers a road map that guides them through the many stages by addressing the conflicts and difficulties that develop, encouraging teamwork and cooperation among group members, facilitating leadership, and ultimately resulting in improved group performance.

Statement of Problem

Past studies on group work have consistently highlighted its benefits and positive outcomes. As can be seen from the literature, previous studies demonstrated that the contribution of leaders who set clear objectives, facilitated communication, handled conflicts, and supported the development of norms and trust in group development had a significant impact on the development of groups, the relationship between group formation, norm development, and team performance (Morgeson et al., 2010). The relationship between group formation, norm development, and team performance was also explored by (Anderson and West, 1998). The results showed that teams that went through the forming, storming, and norming stages showed higher levels of coordination, communication, and satisfaction, supporting Tuckman's model.

However, the majority of the research simply looked at how group work affected completing the assignment. Few studies have looked at how learners perceive themselves and how different aspects of group dynamics interact. Additionally, very few studies on group dynamics among tertiary-level students have been done. Therefore, research into how students view group dynamics and its stages is necessary. In order to improve collaboration, performance, and general group effectiveness, it is hoped that recognizing and navigating the possibilities and difficulties that exist inside groups will be helpful.

Objectives of the Study and Research Questions

This study is done to explore the perception of learners and the dynamics of group work. Specifically, this study is done to answer the following questions;

- How do learners perceive their 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 across all components in group dynamics?

Literature Review

Drawbacks and Benefits of Group Work

Group work offers both benefits and drawbacks in various contexts. The possibility of increased creativity and superior work quality is one of the key advantages of group work. When people with varied backgrounds and viewpoints collaborate, they can come up with a larger variety of ideas and solutions to issues. Working in groups fosters collaboration by allowing participants to draw on one another's knowledge and abilities. Working in a group can also encourage individuals to share knowledge and exercise critical thinking. However, due to potential differences in working styles or degrees of excitement, group work may provide challenges. Group dynamics may lead to unequal participation or the dominance of some people. Furthermore, managing individual duties and organizing timelines might be more difficult while working in a group. However, with the aid of strong leadership, distinct goals, and clearly defined responsibilities, these problems can be minimized, allowing groups to work together successfully to fulfil their aim.

Past Studies on Group Work

Many studies have been done to investigate the impact of group work on education, especially in terms of issues like academic performance Reyes et al (2020); Morais et al (2019) and the development of social skills in students (Buchs and Butera, 2015; Roseth et al., 2008). Johnson and Johnson (1999) conducted a study to investigate the effect of group work on academic performance. A sizable number of persons participated in the study, and the respondents were all students in a classroom context. Data was gathered and academic performance was evaluated using a combination of pre-and post-tests, assignments, and grades. The study found that group projects were more successful than solo ones for students. The research showed that group work promoted critical thinking, problem-solving abilities, and knowledge retention, showing a favourable influence on learning outcomes in an academic setting.

A similar study by Rico et al (2008) looked into the effects of team-building interventions on group dynamics and performance but this study focused on a healthcare setting. The results showed that teams who engaged in team-building exercises developed their capacity for cooperation, communication, and problem-solving. Teams were helped by the intervention to move through Tuckman's model stages and perform at greater levels.

Next, Roseth et al (2008) conducted a study to investigate the development of social skills in students through group work. Participants in this study came from a variety of educational institutions. In order to gather a variety of experiences, the study enlisted a sizable number of individuals. The growth of social skills was evaluated using a mix of observational methods and self-report questionnaires. The study demonstrated that students who actively engaged in group work greatly enhanced their communication, empathy, and cooperation skills. Additionally, it was discovered that group projects promoted a feeling of community,

cooperation, and mutual support among students, aiding in the development of vital interpersonal abilities.

Conceptual Framework

Figure 1 shows the conceptual framework of the study. This study explores the relationship of components of group dynamics. Team interaction does more than lead to the completion of the task. According to Rahmat (2020), team members learn problem-solving skills. During group interactions, team members may or may not agree easily on the same ideas, or the same plans. Through brainstorming and more discussion, the team may reach a consensus through problem-solving activities. This study is rooted from the components of group dynamics by Tuckman (1995) and they are (a) forming, (b) storming, (c) norming and (d) performing. The initial stage of group formation is the forming stage where the team members are just beginning to know one another. The next stage is the storming stage where the team members begin to brainstorm ideas. They may disagree on some approach but in the end, they need to focus on the task. This leads to the next stage- the norming stage where all team members set aside differences and focus on giving the best for the team's success. This leads to the last stage -the performing stage where the team has completed the task - this is the performing stage.

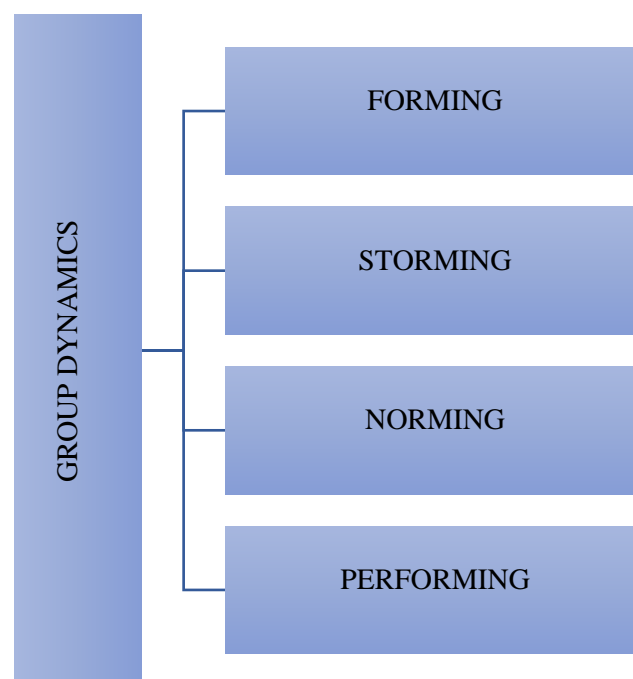


Figure 1- Conceptual Framework of the Study-Relationship of Components in Group Dynamics

Methodology

This quantitative study is done to explore motivation factors for learning among undergraduates. A purposive sample of 167 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Tuckman (1995) 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 forming. Section C has 6 items on storming. Section D has 8 items on norming and section E has 8 items on performing.

Table 1

Distribution of Items in the Survey

Tuckman (1995)

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
.854	29

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .854, 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

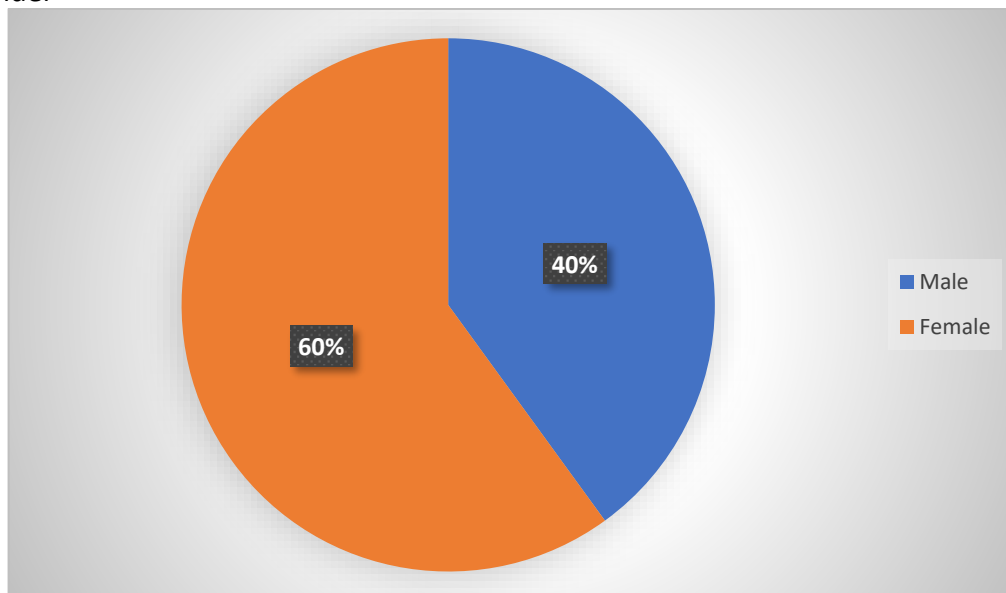


Figure 2- Percentage for Gender

A total number of 167 students consented to have their responses collected. The demographic data obtained in Figure 2 shows a relatively balanced gender distribution among

the respondents, with 40% identifying as male and 60% as female. This distribution indicates the representation of both genders in the sample.

Q2 Discipline

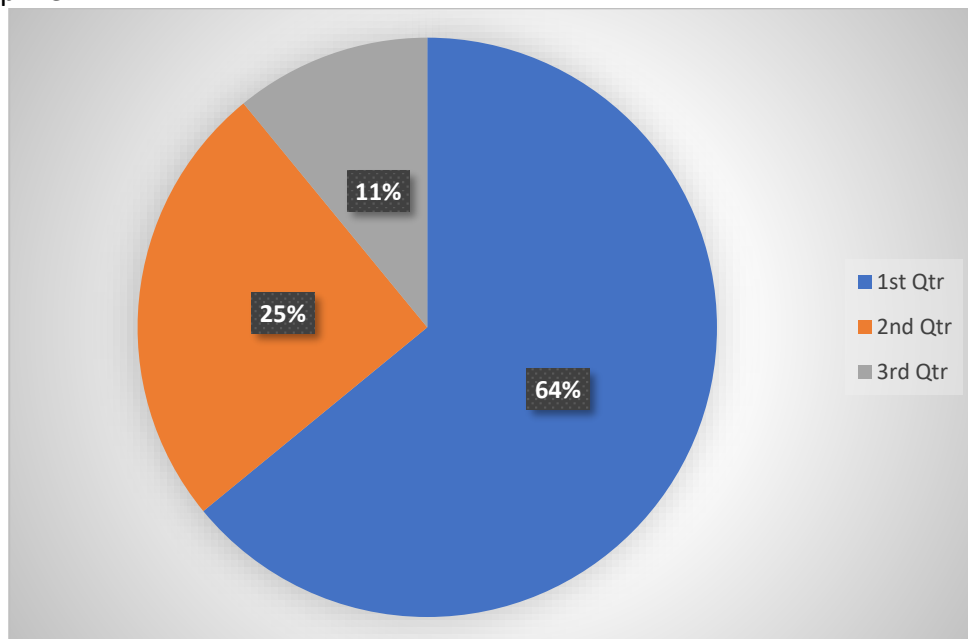


Figure 3-- Percentage for Discipline

Participants were from a variety of programs across the institution, representing different areas of the discipline. Figure 3 presents the percentage of students across academic disciplines, with the majority of 55% being Foundation in Engineering students, followed by Foundation in TESL students (23%) and Foundation in Science students (22%).

Findings for Forming Stage

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

Forming Stage

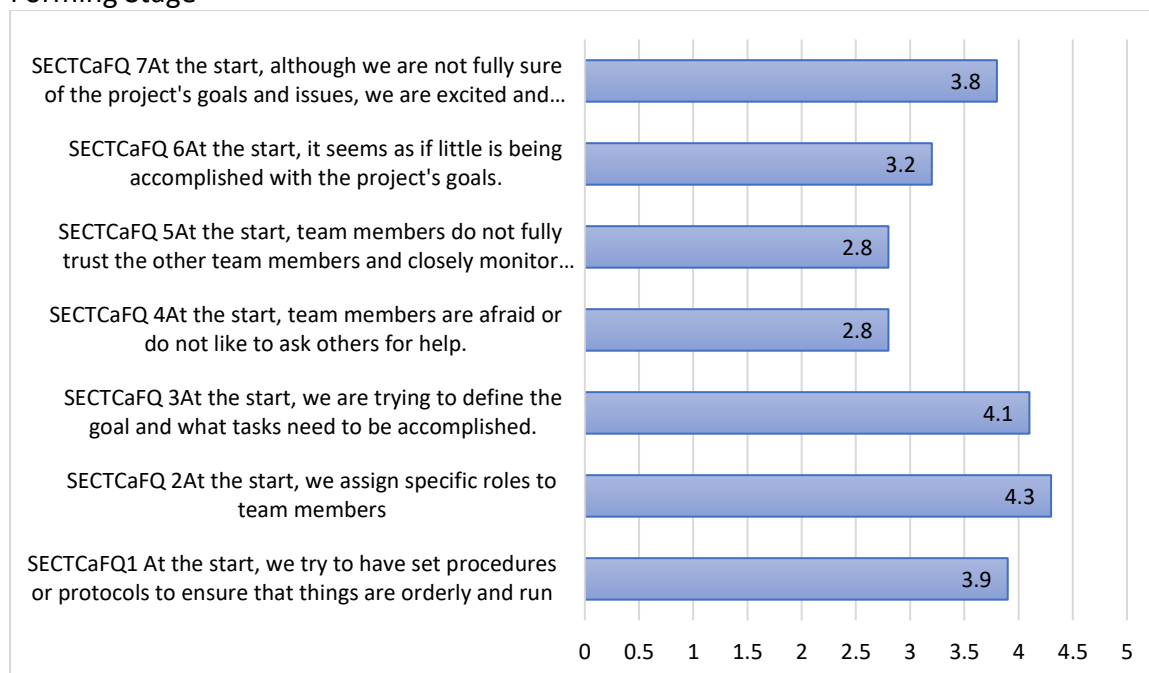


Figure 4- Mean for Forming Stage

As mentioned by Vaida and Serban (2021), the forming stage typically represents an initial stage of group formation. The data presented in figure 4 shows the mean value for the Forming Stage. As shown in Item 1, participants positively indicated that procedures or protocols were set to ensure a smooth flow of tasks (3.9). Item 2 received the highest mean score of 4.3 in which the participants affirmed that specific roles were given to team members before the task was carried out. They further responded that at the start of group formation, goals and tasks needed to accomplish were defined (4.1). In addition, participants were neutral (2.8) regarding both Item 4 and 5 where the statements revolved around the idea of asking for help, trust, and monitoring among group members. They also responded neutrally (3.2) to the statement "At the start, it seems as if little is being accomplished with the project's goals" in Item 6. For the last item in the Forming Stage, respondents had a positive attitude (3.8) towards the excitement and pride of being in the team despite not being fully certain of the project's goals and issues. Overall, the necessity of establishing ground rules, assigning roles, and developing a collective vision need to be recognised in the Forming Stage (Vaida & Serban, 2021).

Findings for Storming Stage

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

Storming Stage

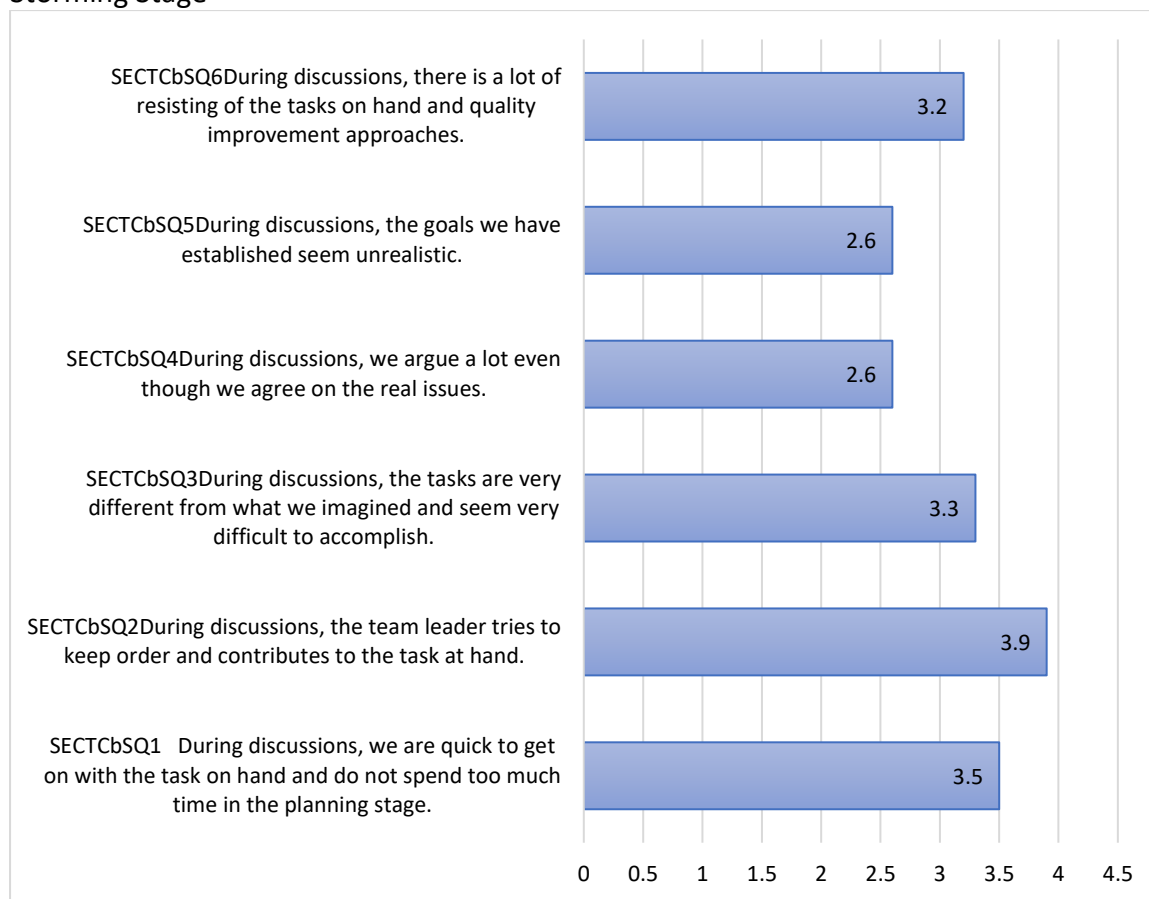


Figure 5- Mean for Storming Stage

The storming stage, as defined by Cheng et al (2021), is the phase when team members start to get to know one another and disputes start to appear. Figure 5 shows the mean scores of six different items for the storming stage in group work. The item 2 has the highest mean score which is at 3.9, followed by item 1 with the second-highest mean score at 3.5 and item 3 with the third-highest mean score at 3.3. Following that, for item 6, the mean score is 3.2. This means that participants believed that they spent more time concentrating on the task at hand than on the planning stage. Participants also find the tasks discussed to be significantly different from what the participants had anticipated, they are seen as challenging and not feasible. Participants perceive the team leader as effectively maintaining order and actively contributing to the task during discussions. Next, as shown in Table 6, the lowest mean score is 2.6 for the items “during discussions, we argue a lot even though we agree on the real issues” and “during discussions, the goals we have established seem unrealistic”. It indicates a balanced perspective among the participants regarding these two items. Overall, the average mean for storming stage in group work is 3.2.

Findings for Norming Stage

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

Norming Stage

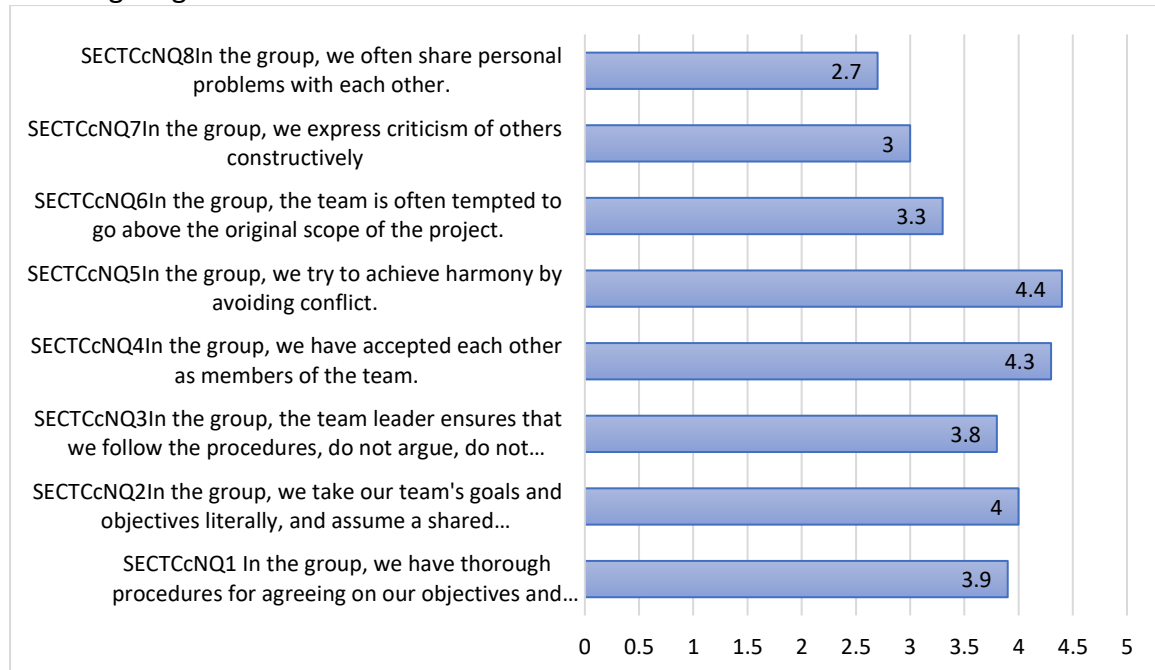


Figure 6-- Mean for Norming Stage

Figure 6 shows the mean scores of eight different items for the norming stage in group work. The item 5 has the highest mean score which is at 4.4, followed by item 4 with the second-highest mean score at 4.3 and item 2 with the third-highest mean score at 4.0. Following that, for the items 1, 3, 6, and 7, the mean scores are 3.9, 3.8, 3.3, and 3.0, respectively. The lowest mean score is 2.7 for item 8. This implies that participants prioritize achieving harmony by avoiding conflict, and acknowledge one another's contributions as a team. As stated by Etareri (2022), as the team enters the norming stage, they begin to work more effectively as a team. Participants also take the team's goals and objectives seriously and assume a shared understanding. In addition, participants also appreciate the team leader's role in enforcing procedures, maintaining order, and keeping discussions focused. They prefer to maintain a professional boundary within the group and prioritize discussions related to group work. Overall, the average mean for norming stage in group work is 3.7.

Findings for Performing Stage

In order to identify the relationship across all components in group dynamics, the data is analysed using the mean for performing stage. Results are shown in figure 7 below to answer research question 4- *Is there a relationship across all components in group dynamics?*

Performing Stage

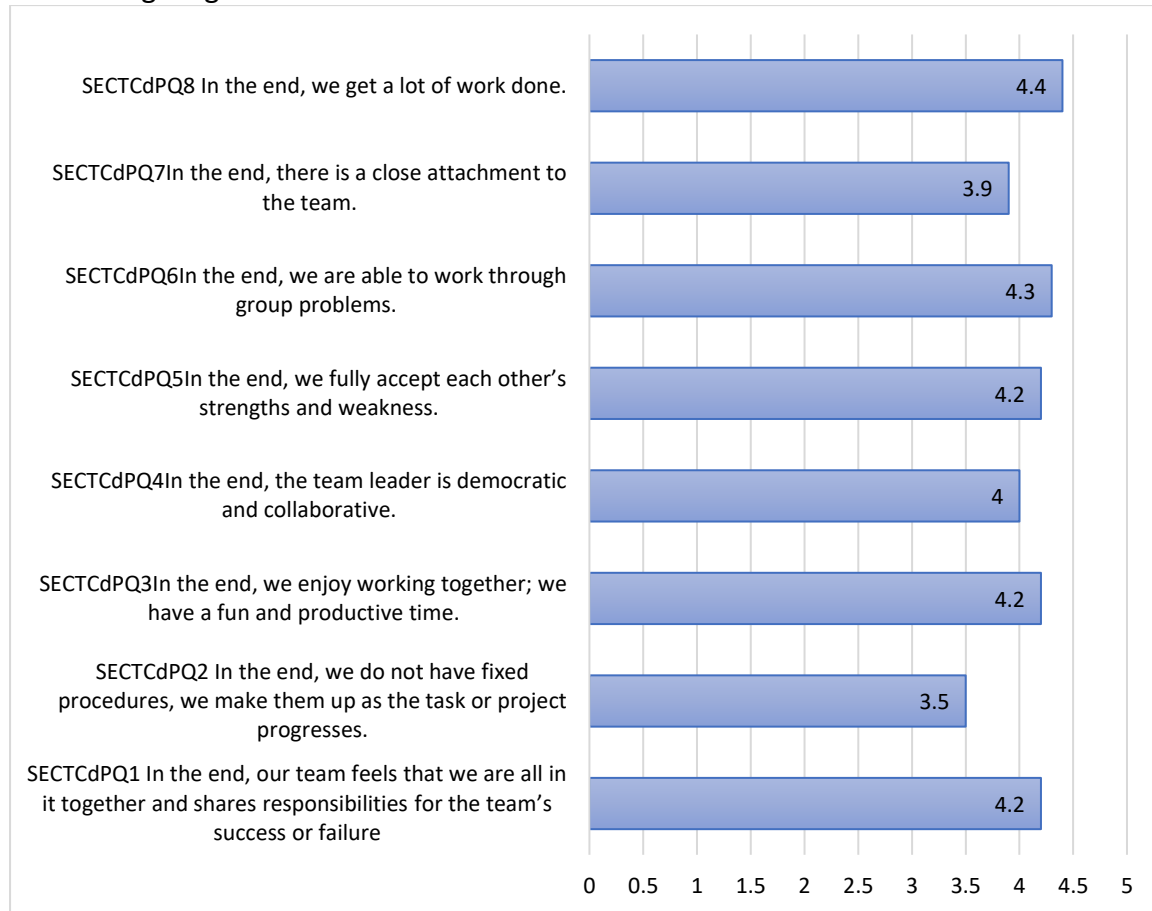


Figure 7- Mean for Performing Stage

According to McShane (2018), the performing stage is where the team members have learned on how to manage and resolve conflicts effectively. The data in figure 7 above indicates the mean for performing stage. As shown in Item 1, participants positively feel that they are in it together and share responsibilities for the team's success or failure (4.2). Item 2 received the lowest mean which is 3.5 where participants do not fix the procedures, instead they transform them as task or project progresses. Item 3 and 5 both positively explained about the team's togetherness where they enjoy working together and accept team member's strengths and weaknesses (4.5). The participants see their leader as democratic and collaborative as highlighted in Item 4 (4) and they believe they are able to solve group problems as stated in Item 6 (4.3). Moreover, even though the participants agreed that they enjoy working together, they scored low on the attachment to the team (3.9). Lastly, in Item 8, it can be seen that participants agreed that they have fulfilled and accomplished their work which have the highest score of 4.4. In conclusion, it can be said that the theory of performing stage allows participants to in various domains strive for mastery and accomplish optimal performance (Ericsson et al., 2007).

Findings for Relationship between

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

Table 3

Correlation between Forming and Storming

		Forming	Storming
Forming	Pearson Correlation	1	.595**
	Sig. (2-tailed)		.000
	N	167	167
Storming	Pearson Correlation	.595**	1
	Sig. (2-tailed)	.000	
	N	167	167

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

Table 3 shows there is an association between forming and storming. Correlation analysis shows that there is a high significant association between forming and storming ($r=.595^{**}$) 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 forming and storming.

Table 4

Correlation between Storming and Norming

		Storming	Norming
Storming	Pearson Correlation	1	.425**
	Sig. (2-tailed)		.000
	N	167	167
Norming	Pearson Correlation	.425**	1
	Sig. (2-tailed)	.000	
	N	167	167

** . 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 moderate significant association between storming and norming ($r=.425^{**}$) 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

Correlation between Norming and Performing

		Norming	Performing
Norming	Pearson Correlation	1	.679**
	Sig. (2-tailed)		.000
	N	167	167
Performing	Pearson Correlation	.679**	1
	Sig. (2-tailed)	.000	
	N	167	167

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

Table 5 shows there is an association between norming and performing. Correlation analysis shows that there is a high significant association between norming and performing ($r=.679^{**}$) 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 norming and performing.

Conclusion

Summary of Findings and Discussions

This study explored students' perceptions of the dynamics of group work through the four stages of group development. From the above analysis and discussion, it can be seen that students generally agree that good leadership practice, clearly defined roles among group members, effective communication among group members, and group cohesion serve as critical factors in facilitating effective collaboration in completing the group work assignment.

In the forming stage, it is revealed that students agreed that a clearly defined goal, procedure, as well as member's role, is important in the initial group development. This is in line with previous findings by (Vaida & Serban, 2021).

In the storming stage, students are generally neutral in their perception. This may suggest that they hold a balanced viewpoint toward this phase of group development. As this stage is crucial for them to resolve any conflicts, their preference for maintaining a harmonious and conflict-free environment within the group could be the reason why they chose to be neutral.

Meanwhile, for the norming stage, the results showed that students feel that it is important to establish cohesion and harmony within the group. They started to solidify and function more cohesively as a group towards completing their task. However, they are still neutral in expressing criticism and problems with each other.

Finally, in the performing stage, it is revealed that the students agreed that as a group they have worked collaboratively and efficiently toward achieving their goal and successfully completing their assignment. By this stage, the group has established a high level of trust, and synergy, resulting in enhanced productivity and effectiveness.

Based on the correlation between all components of group dynamics that were analyzed using SPSS, we also found that there is generally a strong positive relationship across all the components. This indicates the group's ability to navigate conflicts and challenges in a constructive manner. It also reflects the group's capacity to maintain open communication,

respect diverse perspectives, and find resolutions that benefit the group as a whole, ultimately leading to a more cohesive and high-functioning team.

In conclusion, group dynamics are essential for fostering collaboration, facilitating decision-making, maximizing efficiency, enhancing creativity, resolving conflicts, and enabling learning and growth. By understanding and nurturing positive group dynamics, students can unlock their full potential and achieve remarkable outcomes. Thus, it is suggested that Tuckman's model is implemented for any assignments involving group work to ensure that the process of achieving the assignment's objective is done effectively by all members of the group and at the same time produce high-quality outcomes that benefit from the diverse perspectives and collaborative efforts of the team members. This approach allows the group to navigate through the stages of forming, storming, norming, and performing, addressing challenges, fostering cohesion, establishing effective communication, and ultimately delivering results that showcase both the individual talents and the collective synergy of the group.

Pedagogical Implications and Suggestions for Future Research

Understanding the relationship across all components in group dynamics based on Tuckman's model allows both students and educators to better navigate the challenges and complexities of working in groups. It emphasizes the value of effective communication, handling disputes, and setting common objectives. Groups may create an environment that encourages innovation, collaboration, and creativity by understanding how these elements work together. Further research in this area could explore the influence of leadership styles, individual characteristics, and external factors on the dynamics of group development. Furthermore, studying how Tuckman's concept applies in various contexts, such as cross-cultural or virtual teams, would help us gain more complete knowledge of group dynamics and influence our strategies for improving group performance.

References

- Buchs, C., & Butera, F. (2015). Cooperative learning and social skills development. In R. Gillies (Ed.), *Collaborative Learning: Developments in research and practice* (pp. 201-238). New York, New York: Nova Science. Retrieved from <http://hdl.handle.net/20.500.12162/5567>
- Cheng, X., Fu, S., & De Vreede, G. (2021). Determinants of trust in computer-mediated offshore software-outsourcing collaboration. *International Journal of Information Management*, 57, 102301. <https://doi.org/10.1016/j.ijinfomgt.2020.102301>.
- Rahim, M. A. (2002). Toward a theory of managing organizational conflict. *The International Journal of Conflict Management*, 13(3), 206-235.
- Morgeson, F. P., DeRue, D. S., & Karam, E. P. (2010). Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of management*, 36(1), 5-39.
- Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: development and validation of the team climate inventory. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 19(3), 235-258.
- Finkelstein, P. (2017). Promoting effective communication in interprofessional healthcare teams. *Journal of continuing education in nursing*, 48(6), 253-254.

- David, W. J., & Roger, T. J. (1999) Making cooperative learning work, *Theory Into Practice*, 38:2, 67-73, DOI: 10.1080/00405849909543834
- Ericsson, K. A., Prietula, M. J., & Cokely, E. T. (2007). The making of an expert. *Harvard business review*, 85(7/8), 114.
- Etareri, L. (2022). Fundamental stages of development through the relevance of team building. *Medicon Open Access*, 3(1), 48–56. <https://doi.org/10.55162/MCET.03.058>.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (2007). The influence of group dynamics on group performance in collaborative learning. *Active Learning in Higher Education*, 8(3), 200-214.
- Jackson, S. L. (2015) *Research methods and Statistics-A Critical Thinking Approach* (5th Edition) Boston, USA:: Cengage Learning.
- McShane, M. (2018). Enterprise risk management: history and a design science proposal. *The Journal of Risk Finance*, 19(2), 137-153.
- Morais, A. A., Caldeira, B. C., Lima, R. M., Nagai, W. A. (2019) Team-based learning in an engineering course: An experience in Brazil. *International Symposium on Project Approaches in Engineering Education*, 9, pp. 84 - 91
- Rahmat, N. H. (2020) Conflict Resolution Strategies in Class Discussions. *International Journal of Education*, Vol 12(3), pp 49-66. <http://dx.doi.org/10.5296/ije.v12i3.16914>
- Rico, R., Sanchez-Manzanares, M., Gil, F., & Gibson, C. (2008). Team implicit coordination processes: A team knowledge–based approach. *Academy of management review*, 33(1), 163-184.
- Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents' achievement and peer relationships: The effects of cooperative, competitive, and individualistic goal structures. *Psychological Bulletin*, 134(2), 223–246. <https://doi.org/10.1037/0033-2909.134.2.223>
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63(6), 384–399. Retrieved from <https://doi.org/10.1037/h0022100>
- Vaida, S., & Serban, D. (2021). Group development stages. A brief comparative analysis of various models. *Studia Universitatis Babeş-Bolyai Psychologia-Paedagogia*, 66(1), 91–110. <https://doi.org/10.24193/subbpsyed.2021.1.05>