A Study of the Relationship between All Stages of Group Work in Tuckman's Model

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Abstract

Group work is one of the essential components of learning. This study explores the learners' perceptions of group work based on Tuckman's Model. A quantitative survey was conducted with 255 undergraduate students from diverse disciplines. Using a five-point Likert scale questionnaire, learners answered four sections corresponding to each stage of the model which are forming, storming, norming and performing. The findings reveal that learners generally value clear procedure and leadership in group work, particularly in the early stages. Additionally, as challenges arise, learners make an attempt to overcome it as they progress through the stages. Overall, a moderate to strong correlation was found between the stages, reaffirming the relevance of the model in understanding group work. For future research, it is suggested to explore the stages of group work over a longer period of time and within a digital learning environment.

Keywords: Stages of Group Development, Group Work, Forming Stage, Storming Stage, Norming Stage, Performing Stage

Introduction

Group work has long been an integral part of learning, especially in higher education. In the university, learners are often expected to engage with classmates and fulfil requirements of assessment, through both individual and group work. According to Rick et al. (2022), although learners sometimes struggle to communicate with each other, they still acknowledge the importance of group work and value collaboration with their group members. The study further highlights that learners are likely to be motivated and focused on achieving shared objectives when working together.

In understanding the different stages in group development, Tuckman's Model is one of the most widely recognised models, offering insight into the four stages which are forming stage, storming stage, norming stage and performing stage. As Sokman et al. (2023) note, while the stages of group development are recognised and can be adapted for group work, current studies have revealed mixed results regarding its effectiveness. This suggests that the success of each stage depends on the implementation. Moreover, it is pointed out in the study conducted by Wei et al. (2023) that individuals working together can develop varying dynamics when undergoing the stages of group work.

Given the importance of group work, this study focuses on examining the learners' experiences with the forming, storming, norming and performing stages. By exploring the varying dynamics observed when implementing Tuckman's Model, this study seeks to contribute valuable insight on this ongoing discourse.

Statement of Problem

In an ideal scenario, groups collaborate seamlessly, progressing through defined stages of development to achieve optimal performance and productivity. Effective group work fosters innovation, improves decision-making, and ensures that objectives can be achieved efficiently. Models like Tuckman's stages of group development which are forming, storming, norming and performing offer a structured approach to understanding how groups evolve and succeed when dynamics are well-managed (Nakazawa, 2024; Hamilton, 2022). Also added, this model has been applied in various fields including business and education. For example, superiors refer to Tuckman's Model as a basis for corporate production, assisting project teams from initial uncertainty to high-performing collaboration. While in education, learners are expected to apply this model in group work for stronger cohesion among them and thus improve academic outcomes.

Despite the theoretical framework provided by Tuckman's model, many groups struggle to reach the performing stage or fail to sustain high levels of efficiency throughout the group development (Wei et al., 2023; Zirar et al., 2023). In real-world settings when adapting to group work, challenges like unresolved conflicts, unclear roles, and poor leadership disrupt group dynamics, causing inefficiencies (Hamilton, 2022). Nakazawa (2024) mentioned that with the diverse personalities and backgrounds, and styles of communication among members, it influences the relationship between the stages in a group work. The members tend to experience the group work differently and have a higher tendency to revisit earlier stages as they struggle to achieve the end goals. As a result, members in the group often underperform, leading to wasted resources, missed deadlines, and dissatisfaction among members, specifically in education.

Investigating the relationship between Tuckman's model stages and group work efficiency is crucial for bridging the gap between theory and practice. By addressing this gap can help the members create high-performing teams, enhancing outcomes across diverse fields. This study is especially relevant in today's collaborative environments, where efficient group work is critical, for both educational and professional success. Specifically, this study is to answer the following questions;

● How do learners perceive the forming stage of group work in educational settings?
● How do learners perceive the storming stage of group work in educational settings?

- How do learners perceive the norming stage of group work in educational settings?
- How do learners perceive the performing stage of group work in educational settings?
- What is the relationship between the stages of Tuckman's model in educational settings?

Literature Review
Implications of Group Work According to Tuckman's Model

Tuckman (1965) theorised for a group to be efficient, it must go through the four stages of development, which are forming, storming, norming, and performing. To understand more about the group's dynamics can be influenced, it is advisable to look into the stages. The first stage is called the forming stage, which consists of a group familiarising themselves with each other's characteristics to form the dynamic among members (Tuckman, 1965). According to Opio (2024), the group members are highly dependent on the leader for guidance during this stage as they have no content or sentiment to rely on. The leader is expected to create a protocol that would maximise the group members' skills to ensure efficiency in their interactions and productivity. This is the stage where the team members create their own schemata on their team members' boundaries, the team's ground rules, and skills. Negative feelings may influence the team's interactions due to unsolidified roles that they may have in the team (Opio, 2024).

The second stage, storming, is characterised by interpersonal conflicts and competition as group members start to assert themselves in the group interactions (Tuckman, 1965; Opio, 2024). The drawbacks may include resistance to group tasks due to pride being bruised, competition for leadership acknowledgement, and emotional tension. Yang (2013) theorised that this stage is inevitable, as without conflicts, the team may not be able to test their skills and abilities against each other. Additionally, the leader should play their role by mediating the conflicts and nurture the group members' similarities (Opio, 2024). They should also reinstate the common goal that each group member shares to focus their possible aggression towards each other to a positive outcome that would benefit the group as a whole.

The third stage, norming, is characterised by cohesion and collaboration by which the group would have developed trust in their capabilities to work together while accepting the responsibility of their roles (Tuckman, 1965; Zimba, 2024). Ideally, the leader's presence should not be needed to reconcile differences between the team that may arise from conflicts during their interactions. However, Zimba (2024) emphasised that teams may avoid conflicts entirely to maintain harmony, which may lead to unresolved issues within the team's interactions unless addressed by the leader.

The fourth stage, performing, is characterised by efficiency and goal achievement within the team (Tuckman, 1965). In this stage, the team is expected to operate as a unified entity, focusing on achieving the goals set early on during the forming stage and being able to adapt to each other's dynamics. According to Opio (2024) and Zimba (2024), however, this stage is only as effective as the leadership of the team, as the leader must continuously reinforce the team's positivity and ground rules to avoid regression.

Every stage in the group development must be adapted to its challenges and strengths in achieving an effective and efficient outcome. A strong leadership should be applied in

managing a group as a discerning leader can facilitate each stage and maintain the balance between content, process, and sentiment. Ultimately, the success of a group work hinges not only on the members ability to execute tasks but also the quality of relationships and communication, with leadership playing a central role in fostering these elements throughout the group work.

Benefits of Group Work

According to Omer (2019), group work as a collaborative strategy has been extensively examined, especially through the lens of Tuckman's Model, which identifies four stages of group development. They provide a structured framework to understand group dynamics, challenges, and benefits (Tuckman & Omer, 2019). The first stage is called the forming stage, where the group is able to interact and establish their roles before undertaking tasks delegated to them by the leader. This stage promotes the group to learn to understand each other's strengths and weaknesses, allowing them to devise strategies to work together (Omer, 2019). The benefits of this stage include peer-to-peer understanding, community building, and enhancing interpersonal and problem-solving skills (Sokman, 2023). Additionally, this stage also fosters early-stage support, which prevents isolation and increases task engagement between group members (Omer, 2019).

During the storming stage, this is where the group would learn how to navigate conflicts. It is an opportunity for the group to develop conflict resolution skills as the members learn how to assert their individual perspective and negotiate the group norms with each member (Sokman, 2023). This encourages critical thinking and negotiation skills by engaging in different opinions on how to solve the tasks at hand (Kavanagh, 2023). It would also provide a platform for resolving interpersonal conflicts and strengthening the group's effort to solve problems (Kavanagh, 2023).

As the group goes through the first two stages well, they reach the norming stage, where cohesion is established. This stage tests how conflicts are resolved and norms are encoded as protocols in the team's operation (Kavanagh, 2023). It also promotes group cohesion and practices mutual respect, indirectly encouraging networking for future projects should the group ever be adjourned (Omer, 2019). The group would also learn how to form and accept constructive criticism.

In the performing stage, the group should be functioning optimally as they achieve their goals through high-level cooperation and communication (Omer, 2019; Sokman, 2023). In this stage, group members typically engage in self-regulation and task commitment, resulting in increased productivity and increased teamwork. Additionally, it would also foster a deeper understanding of content and practical application of shared knowledge (Kavanagh, 2023).

In conclusion, the proper application of Tuckman's Model as protocols to run a successful team can lead to beneficial outcomes for individuals' and team's development of soft skills and knowledge. It is encouraged for leaders to apply the model to foster environments conducive to collaboration, trust, and conflict resolution.

Past Studies on Group Work

Group work is a common strategy in higher education, offering numerous opportunities for collaboration and skill development. It provides clear benefits, such as improving learning, enhancing interpersonal skills, and exposing participants to diverse viewpoints. Through group work, students actively engage with the material, which supports better problem-solving and deeper understanding. Kamaludin et al. (2022) point out that online group work increases student engagement by promoting collaboration. Additionally, group work fosters essential skills like communication, collaboration, and conflict resolution. Group work helps the members navigate stages of development, enabling them to acquire collaboration skills vital for future success (Samad et al., 2023). Exposure to varied perspectives also enriches the learning experience. Sokman et al. (2023) emphasize that such diversity broadens decision-making and reduces the risk of groupthink.

However, group work is not without its drawbacks. Unequal participation is a major known issue, as some members contribute more while others, less. This problem, as Kamaludin et al. (2022) observe, becomes greatly pronounced in virtual environments, where equitable participation is difficult to maintain. Conflicts also arise, often due to differing ideas, personal dynamics, or working methods. According to Samad et al. (2023), this is particularly common during the "storming" stage of Tuckman's model, when members establish their roles within the group. Another significant drawback is coordination, as synchronizing efforts and scheduling meetings can be difficult. Sokman et al. (2023) note that these issues are most apparent during the "forming" stage, when groups are still defining their norms and processes.

In summary, Tuckman's model of group development provides a useful framework for addressing these drawbacks. The model identifies four stages: forming, storming, norming, and performing. In the forming stage, members build initial connections and set goals, but uncertainties can arise without clear guidance (Sokman et al., 2023). During the storming stage, conflicts emerge as individuals assert their ideas, making effective conflict resolution essential (Samad et al., 2023). As groups progress to the norming stage, they establish trust and define roles, which Kamaludin et al. (2022) highlight as key for successful collaboration. Finally, in the performing stage, groups achieve high efficiency and autonomy in their work (Sokman et al., 2023).

Conceptual Framework

Among one popular classroom activity is class discussion through group work. Class discussion offers more than just interactions to learners (Rahmat,et.al, 2020). The activity exposes learners to different types of experience at different stages. This study (figure 1) investigates perception of learners on all stages of group work by Tuckman (1965). He presented four stages of group work and they are (a) forming, (b) storming, (c) norming and (d) performing. According to Vygotsky (1978), discussions in group work allow learners to improve their communication skills as well as critical thinking capacity. Tuckan's (1965) first stage is the forming stage and this is the initial stage where learners get to know one another. The second stage is the storming stage. This is the stage where team members begin discussions on making the assignment successful. Usually this is the stage with disagreements and sometimes arguments. However, based on Vygotsky's (1978), this disagreement enhances participants critical thinking skills. The third stage is the norming stage where

participants begin to refocus the discussion towards completing the group task. The final stage is performing stage and this is the stage when the group displays their product of discussion.
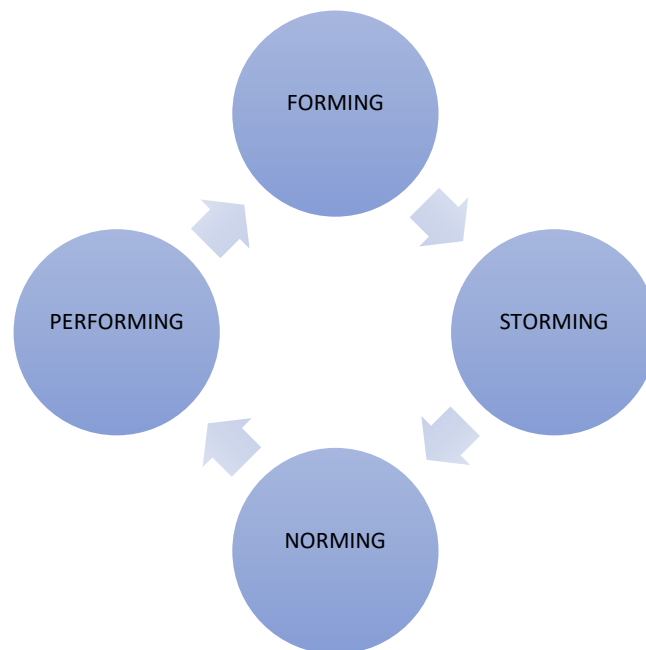

Figure 1. Conceptual Framework of the Study
Relationship between all stages of group work in Tuckman's Model

Methodology

This quantitative study is done to explore motivation factors for learning among undergraduates. A purposive sample of 255 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Tuckman (1965) 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 stage. Section C has 6 items on storming stage. Section D has 8 items on 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	7
D	NORMING	9
E	PERFORMING	8
		31

Table 2
Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.882	31

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .882, 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

Table 3
Percentage for Q1 - Gender

NO	ITEM	PERCENTAGE
1	Male	22%
2	Female	78%

Table 3 presents the gender percentage distribution of the learners. The findings reveal a significant gender imbalance, with females comprising the majority at 78%, while males account for only 22%. Overall, the data emphasized that more than half of the respondents are female learners, whereas male learners appear to be a minority in this survey.

Table 4
Percentage for Q2 - Discipline

NO	ITEM	PERCENTAGE
1	Science & Technology	54%
2	Social Sciences	46%

Table 4 presents the percentage distribution of learners based on their field of discipline. The findings show that learners from Science and Technology make up the majority at 54%, while those from Social Sciences account for 46%. This indicates a relatively balanced representation of both disciplines, with a slight predominance of learners from Science and Technology.

Findings for Forming Stage

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

Table 5

Mean for Forming Stage

ITEM	MEAN	SD
Q1 At the start, we try to have set procedures or protocols to ensure that things are orderly and run	4.1	.80752
Q2 At the start, we assign specific roles to team members	4.4	.69899
Q3 At the start, we are trying to define the goal and what tasks need to be accomplished.	4.4	.72181
Q4 At the start, team members are afraid or do not like to ask others for help.	3	.9852
Q5 At the start, team members do not fully trust the other team members and closely monitor others who are working on a specific task.	3	1.08213
Q6 At the start, it seems as if little is being accomplished with the project's goals.	3.8	.83098
Q7 At the start, although we are not fully sure of the project's goals and issues, we are excited and proud to be on the team.	3.9	.88497

Table 5 depicts the mean score for learner's perception on the forming stage in group work. Items Q2 and Q3 hold the highest mean of 4.4 which reflects learners' view on the importance of defining roles and goals in their group work. Next, Q1 with the second highest mean of 4.1 which also reflects a sense of structure and procedure in the forming stage of group work. This suggests that learners favor a well-structured approach to project initiation, where establishing procedures and clearly defined roles are seen as essential for success. Similarly, learners have a positive attitude, enthusiasm and drive towards group work despite the uncertainties at an early stage of the work which is reflected in items Q6 and Q7 with the mean of 3.8 and 3.9 respectively which encompass learners' view on team work progress, morale and motivation. However, items Q4 and Q5 depict learners' struggles with trust and collaboration with the mean score of 3.0. This finding suggests that the learners may take time to build trust and establish open communication. Furthermore, these findings indicate that despite appreciating clear outline of work flow and expectations for each member, the learner's wariness towards each other are still apparent in this stage as there is need to establish a certain level of understanding and rapport between each member of the group.

Findings for Storming Stage

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

Table 6

Mean for STORMING STAGE

ITEM	MEAN	SD
Q1 During discussions, we are quick to get on with the task on hand and do not spend too much time in the planning stage.	3.4	.88965
Q2 During discussions, the team leader tries to keep order and contributes to the task at hand.	4.2	.7470
Q3 During discussions, the tasks are very different from what we imagined and seem very difficult to accomplish.	2.9	.87619
Q4 During discussions, we argue a lot even though we agree on the real issues.	2.8	1.8740
Q5 During discussions, the goals we have established seem unrealistic.	3.7	.86929
Q6 During discussions, there is a lot of resisting of the tasks on hand and quality improvement approaches.	3.7	.90898

Table 6 displays the mean score for the storming stage in teamwork perceived by learners. Item Q2 has the highest mean score of 4.2, indicating that the learners benefit from a strong and orderly leader who actively participates in the group. Next, Q5 and Q6 reflect the mean score of 3.7. These encompass that the learners recognise the importance of setting goals even though they find it somewhat challenging and perceive some resistance to fulfill the goals. For Q1, with a mean score of 3.4, it proves that the learners have the tendency to rush into tasks without proper planning. Finally, the lowest means scores are 2.9 and 2.8, for Q3 and Q4. These findings indicated that the learners somewhat struggle to achieve the goals and have the tendency to argue. As a whole, while the group demonstrates strong leadership and direction, challenges in planning, goal-setting, and interpersonal dynamics hinder optimal performance. By addressing these issues with structured strategies, the team can foster better collaboration, clarity, and alignment with objectives.

Findings for Norming Stage

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

Table 7

Mean for NORMING STAGE

ITEM	MEAN	SD
Q1 In the group, we have thorough procedures for agreeing on our objectives.	4	.78807
Q2 In the group, we have thorough procedures for planning the way we will perform our tasks..	4.1	.75842
Q3 In the group, we take our team's goals and objectives literally, and assume a shared understanding..	4.1	.76781
Q4 In the group, the team leader ensures that we follow the procedures, do not argue, do not interrupt, and keep to the point.	3.9	.86056

Q5 In the group, we have accepted each other as members of the team.	4.4	.64768
Q6 In the group, we try to achieve harmony by avoiding conflict.	4.5	.65667
Q7 In the group, the team is often tempted to do more than what was required for the project	3.6	.98574
Q8 In the group, we express criticism of others constructively	3.3	1.05911
Q9 In the group, we often share personal problems with each other.	3	1.12931

Table 7 displays the mean score for the norming stage in team work perceived by learners. Q6 achieved the highest mean score of 4.5, indicating that team members are committed to maintaining harmony by avoiding conflict. Similarly, Q5 achieved a mean score of 4.4, showing that members feel a strong sense of acceptance within the group. Mean scores for Q1, Q2, and Q3 were 4.0, 4.1, and 4.1, respectively, indicating that the group has established clear procedures for setting objectives, planning tasks, and maintaining a shared understanding of goals. In contrast, Q4, Q7, Q8, and Q9 received lower mean scores. Q4 recorded a moderate score of 3.9, suggesting that the team leader could improve in enforcing procedures and maintaining order. Q7 scored 3.6, showing a moderate inclination to focus on project requirements without exceeding them. Q8 and Q9 had the lowest scores of 3.3 and 3.0, highlighting limited constructive criticism and infrequent personal sharing. These findings suggest that while the group excels in organizational processes and maintaining harmony, there is room for improvement in fostering open communication and deeper team connections.

Findings for Performing Stage
This section presents data to answer research question 4 - How learners perceive the performing stage in group work?
Table 8
Mean for PERFORMING STAGE

ITEM	MEAN	SD
Q1 In the end, our team feels that we are all in it together and shares responsibilities for the team's success or failure	4.4	.72776
Q2 In the end, we do not have fixed procedures, we make them up as the task or project progresses.	3.6	.97073
Q3 In the end, we enjoy working together; we have a fun and productive time.	4.3	.75499
Q4 In the end, the team leader is democratic and collaborative.	4.1	.78418
Q5 In the end, we fully accept each other's strengths and weakness.	4.4	.70589
Q6 In the end, we are able to work through group problems.	4.4	.67648
Q7 In the end, there is a close attachment to the team.	4.1	.86260
Q8 In the end, we get a lot of work done.	4.5	.64510

Table 8 presents the mean score of learners' perceptions on the performing stage in group work. The highest mean score, 4.5, is observed for Q8, indicating that learners view their

group work as particularly productive during this stage. Similarly, a mean score of 4.4 is reported for Q1, Q5, and Q6, reflecting strong collaboration, mutual understanding, and effective problem-solving within the groups. Q3 records a mean score of 4.3, suggesting that learners experience positive emotions during group activities. Meanwhile, the mean scores for Q4 and Q7, both recorded at 4.1, highlight the team leader's democratic approach and the close bonds among team members, underscoring a sense of leadership and unity. However, Q2 has the lowest score of 3.6, indicating only a moderate level of adaptability in the group's approach to tasks. Overall, the findings reveal that learners generally perceive the performing stage of group work positively, with particular emphasis on teamwork, productivity, and cohesion. While most aspects are rated highly, the relatively lower score for adaptability suggests a potential area for improvement.

Findings for Relationship between all Stages in Group Work
This section presents data to answer research question 5 - Is there a relationship between all stages in group work?

To determine if there is a significant association in the mean scores between all stages in group work, data is analysed using SPSS for correlations. Results are presented separately in table 9, 10, 11 and 12 below.
Table 9
Correlation between Forming and Storming Stage

Correlations

		FORMING	STORMING
FORMING	Pearson Correlation	1	.460**
	Sig. (2-tailed)		.000
	N	255	255
STORMING	Pearson Correlation	.460**	1
	Sig. (2-tailed)	.000	
	N	255	255

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

Table 9 shows there is an association between forming and storming stages. Correlation analysis shows that there is a moderate significant association between forming and storming stages (r=.460**) 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 forming and storming stages.

Table 10
Correlation between Storming and Norming Stage

Correlations

		STORMING	NORMING
STORMING	Pearson Correlation	1	.383**
	Sig. (2–tailed)		.000
	N	255	255
NORMING	Pearson Correlation	.383**	1
	Sig. (2–tailed)	.000	
	N	255	255

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

Table 10 shows there is an association between storming and norming stages. Correlation analysis shows that there is a moderate significant association between storming and norming stages (r=.383**) 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 stages.

Table 11
Correlation between Norming and Performing Stage

Correlations

		NORMING	PERFORMING
NORMING	Pearson Correlation	1	.671**
	Sig. (2–tailed)		.000
	N	255	255
PERFORMING	Pearson Correlation	.671**	1
	Sig. (2–tailed)	.000	
	N	255	255

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

Table 11 shows there is an association between norming and performing stages. Correlation analysis shows that there is a high significant association between norming and performing stages (r=.671**) 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 stages.

Table 12
Correlation between Performing and Forming Stage

Correlations

		PERFORMING	FORMING
PERFORMING	Pearson Correlation	1	.421[**]
	Sig. (2-tailed)		.000
	N	255	255
FORMING	Pearson Correlation	.421[**]	1
	Sig. (2-tailed)	.000	
	N	255	255

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

Table 12 shows there is an association between performing and forming stages. Correlation analysis shows that there is a moderate significant association between performing and forming stages (r=.421**) 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 performing and forming stages.

Conclusions
This study aimed to explore the perception of learners on group work based on Tuckman's Model which are forming, storming, norming and performing stages. The findings revealed significant insights on how learners engage with each other throughout the stages and its overall effectiveness.

For the forming stage, it is indicated that learners value structured approaches and procedure. It is emphasised among them that roles of each member and the goals to be achieved must be established from the beginning. Yet, one of the issues mentioned is hesitation or trust issues among the learners. Similar to previous studies conducted by Opio (2024) and Sokman (2023), it is highly recommended to emphasise on leadership and establish clear procedure in order to build strong collaboration during group work. It is also established that it is common for members to take more time to trust each other during this stage, however, Opio (2024) focuses on the members emotional state, while Sokman (2023) looks into the procedure such as setting up goals and delegating tasks.

For the storming stage, the learners acknowledge the importance of strong leadership in maintaining positive communication, even when there is a possibility of encountering challenges. As supported by Kavanagh (2023), clear roles and responsibilities equip learners with better understanding to resolve challenges in this stage. The learners should trust one another to ensure a smooth process.

In the norming stage, it is found that the learners are able to maintain harmony in minimising conflict. They have a positive outlook on the progression of their group work, but still find it

challenging to exchange opinions and issues among. In simpler terms, learners are willing to work in groups, limited to the task assigned. This finding is supported by Kavanagh (2023), which highlights the importance of mutual trust among members. It further explains that the establishment of procedure can minimise conflict in this stage.

In the performing stage, it is revealed that the learners are highly productive. They shared responsibility, collaborated and understood each other. Both Omer (2019) and Wei et al. (2023) also reported that groups which demonstrate high productivity are inclined to achieve success. In short, the objectives of the group formation can only be achieved through effective group work.

In general, this study demonstrated a moderate to strong positive relationship between the stages of group work. This reinforces that each stage builds upon the previous one, and supports the Tuckman Model (1965). It is suggesting that successful group work requires the members to go through each stage, with mindfulness to resolve the challenges and complete the task. Similar to Hamilton (2022), it is agreed that the success of a task relies on the seamless progression throughout the stages of group work, whether in educational or professional settings.

Pedagogical Implications and Suggestions for Future Research
The findings of this study are aligned with the Tuckman Model. First, strong leadership is essential, particularly during the storming stage to ensure active participation among learners. Second, with structured guidelines and procedure, it is easier for learners to navigate their roles throughout the stages. Third, the vitality of open communication among members. Learners should be able to share constructive thoughts and feedback. Finally, the findings suggest a lack of adaptability in group work, indicating the need to establish encouraging surroundings for the learners to adjust to the stages.

Given these insights, future research should focus on a few key areas. Researchers can look into the evolvement of group members over a longer period of time, rather than a single instance. Other than that, researchers can also identify digital collaboration as one of the variables to identify the progress of each stage. Finally, researchers can design or test intervention strategies to ensure smoother progress throughout the stages. These future research can refine and expand the findings to allow learners to continuously collaborate effectively.

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