

# The Influence of Conflict in Group Work According to Tuckman's Model

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## ABSTRACT

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*This study explores the perspectives of foundation studies students in Malaysia regarding the four stages of the Tuckman Model (forming, storming, norming, performing) in the context of group work. Additionally, it examines the correlation between these phases and conflicts within a group. The study, which involved 178 individuals, reveals significant links between different stages of group growth that influence both group dynamics and learning outcomes. The findings highlight the significance of competent leadership in handling the storming phase and emphasise the critical roles of communication and trust in the shaping and norming stages. Furthermore, the results emphasise the importance of connectedness in improving group productivity throughout the performing phase. Proficiently managing disagreements has been demonstrated to improve group dynamics and promote development. This study offers crucial insights into the ways in which organised group interactions might enhance educational settings by analysing both the difficulties and favourable aspects of each phase. Suggestions encompass techniques for enhancing communication and collaboration abilities, along with guidance for maximising teaching approaches by gaining a more profound comprehension of group dynamics.*



# 1. INTRODUCTION

## *1.1 Background of Study*

Comprehending the mechanics of efficient teamwork and collaboration is essential in educational environments as it immediately impacts the achievement of group projects and the overall educational advancement of students. Johnson and Johnson (2009) state that good teamwork improves group performance by encouraging positive interdependence and promotive interaction. These interactions are crucial for achieving higher levels of performance and efficiency, since they foster a more captivating and nurturing learning environment.

Roseth, Johnson, and Johnson (2008) assert that student collaboration plays a crucial role in attaining academic goals and cultivating vital abilities such as communication, problem-solving, and critical thinking. Their meta-analysis of studies on cooperative learning found that the establishment of positive peer relationships through collaboration accounted for a substantial amount of the variation in academic achievement among early adolescents. In addition, Gillies and Ashman (2003) emphasise that cooperative learning not only enhances academic achievements but also fosters socialisation and the formation of friendships, so helping both social and intellectual growth. Hence, cultivating a cooperative atmosphere in educational environments is crucial for achieving academic excellence and encouraging personal growth.

Group projects are an essential element of education, playing a crucial role in moulding students' perspectives, attitudes, and actions as they interact with their classmates. Comprehending group dynamics is crucial as it has a substantial influence on the effectiveness of these cooperative endeavours. This element is particularly crucial in universities where collaborative assignments are common across different programmes, such as in foundation studies. According to Othman et al. (2023), the effectiveness of these assignments depends on effective group management, which enhances group performance and enhances learning outcomes.

Moreover, successful collaboration cultivates a feeling of camaraderie and inclusion among students, creating an environment where everyone is valued and esteemed, as emphasised by Buchs and Butera (2015). Conflicts are inevitable in any group context, especially during the storming period. During this stage, members of the team have different viewpoints, encounter difficulties, and vie for positions and resources (Tuckman, 1965). The Tuckman model identifies the storming stage as a phase in the development of a group characterised by disputes, power struggles, and divergent viewpoints. During this time, people may experience heightened stress and ambiguity as they establish their roles, establish standards, and address their interests within the group's dynamics (Tuckman, 1965). Although challenging, the storming period presents chances for development and cooperation as team members acquire skills in managing disagreements, establishing trust, and cultivating mutual respect (Tuckman, 1965). By acknowledging that conflict is inevitable during this stage, educators can effectively address difficulties by promoting dialogue and cultivating transparent communication within the group. Through the utilisation of conflict resolution strategies and the promotion of problem-solving approaches, educators can effectively reduce the negative effects of conflicts and establish a supportive team atmosphere that facilitates the attainment of shared objectives.

Furthermore, acquiring proficient cooperation skills enables instructors to effectively lead pupils through the many phases of group development (Morgeson et al., 2010). Understanding the many phases of group growth, including formation, storming, norming, and performing,

enables educators to intervene when necessary to handle conflicts, promote collaboration, and enhance team cohesion (Rahim, 2002).

Thus, a strong understanding of teamwork and collaboration is crucial for creating an educational setting that promotes academic progress and the cultivation of interpersonal abilities. By utilising this comprehension, instructors can optimise group projects to foster learning experiences, critical thinking, and student development.

### ***1.2 Statement of Problem***

Although there has been considerable research on group dynamics, there is still a substantial lack of understanding on how learners perceive and traverse the many stages of group collaboration, namely forming, storming, norming, and performing. This discrepancy is crucial because these beliefs have a direct impact on the efficacy of group work, which is fundamental in educational environments. Positive interdependence and promotive contact are crucial for achieving increased productivity and success in a group. Effective collaboration fosters these elements, leading to enhanced group performance (Johnson & Johnson, 2009). Nevertheless, educators may have difficulties in effectively implementing solutions that improve these interactions if they lack an understanding of how learners perceive these stages. The storming stage is notably arduous due to the presence of conflicts and divergent viewpoints. If not effectively addressed, these factors might impede group unity and hinder growth (Tuckman, 1965). Gaining insight into the experiences of learners at this level is essential for creating conflict resolution tactics that reduce disruptions and promote a more unified group atmosphere (Rahim, 2002). Furthermore, collaborative learning has a vital role in attaining academic goals and fostering crucial abilities such as communication, problem-solving, and critical thinking (Roseth, Johnson, & Johnson, 2008). However, without a comprehensive comprehension of student perceptions, the complete advantages of collaborative learning may not be achieved. This study seeks to close this divide by investigating learners' perspectives on the steps of creating, storming, norming, and performing in group work. The issue stems from the absence of comprehensive understanding of various perspectives, which is crucial for devising successful educational interventions. Every stage of a process provides distinct problems that can greatly impact the dynamics and results of a group. During the shaping stage, it is crucial to establish a comprehensive comprehension of responsibilities and goals in order to create a pleasant atmosphere for the entire project. Conversely, if disagreements arise during the storming stage and remain unresolved, they might result in ongoing problems (Belbin, 1981; Hackman, 1987). Hence, the objective of this study is to offer significant insights that can guide educational methods, improve group effectiveness, and deepen our understanding of collaborative learning experiences. In order to effectively help students, educators must have a clear grasp of how learners perceive and navigate different stages. Failure to do so can result in persistent problems in group dynamics, including unresolved disputes, lack of cohesion, and inefficient collaboration (Fittipaldi, 2020; Othman et al., 2023). The study aims to rectify these difficulties in order to boost the overall efficacy of group projects and optimise learning results.

### ***1.3 Research Questions***

This study explores learners' perception of their use the stages of group development are forming, storming, norming, and performing. Specifically, this research answers the following questions:

- What is the perception of learners regarding the process of forming phases in group work?

- What is the perception of learners regarding group conflicts during the storming stage of group work?
- What is the perception of learners towards the norming stage in group work?
- What is the perception of learners towards the performing stage in group work?
- Is there a correlation between group conflicts and all other stages of group work?

#### ***1.4 Research Objectives***

- To investigate learners' perceptions of the forming stages in group work.
- To examine learners' perceptions of group conflicts (storming stage) in group work.
- To explore learners' perceptions of the norming stage in group work.
- To assess learners' perceptions of the performing stage in group work.
- To determine the relationship between group conflicts and all other stages in group work from the learners' perspective.

## **2. LITERATURE REVIEW**

### ***2.1 Group Work and Group Conflicts***

Collaborative group work is a widely accepted and effective pedagogical approach that fosters teamwork, problem-solving, and critical thinking skills in students. It is a successful approach that is dependent on several principles, which include members of a group constantly communicating and communicating for a purpose, there is meaning, there is feedback, and appropriate communication channels are used (Toseland & Rivas, 2005). Despite the attractiveness of using group work, students face challenges and conflicts in completing group tasks (Fittipaldi, 2020). These conflicts can arise for various reasons, such as differences in work ethics, communication styles, or unequal participation. Furthermore, conflicting ideas or perspectives within the group can lead to disagreements and hinder the overall progress of the assignment (Hodges, 2018).

Toseland and Rivas (2005) explain that there needs to be a balance between the needs of the individuals within the group, managing roles, and status hierarchies are working to benefit rather than hinder or limit individual members and the whole group. Educators must address these conflicts to help their students have a positive and productive group work experience (Fittipaldi, 2020). One strategy to resolve conflicts in group work is to set clear guidelines for collaboration to reduce the potential risk of others not being held accountable for their lack of participation in the assigned group task. Hodges (2018) identifies the gap in group learning and suggests practical activities for an effective classroom. Whereas Fittipaldi (2020) recommends keeping teams small and acknowledges the use of electronic tools in group work. To conclude, addressing conflicts in group work is essential for the success of collaborative assignments.

### ***2.2 Past Studies on Group Work***

Past studies on group work have consistently highlighted both the potential benefits and challenges associated with collaborative efforts. One of the most influential theories in this domain is Tuckman's (1965) stages of group development. Tuckman (1965) highlighted that groups typically progress through five stages: forming, storming, norming, performing, and adjourning. This framework has been widely validated through empirical research, demonstrating that successful navigation through these stages can lead to higher productivity and more cohesive group dynamics. Tuckman's model underscores the importance of group

processes and the need for effective leadership to guide groups through the potentially turbulent storming phase, where conflicts and disagreements are common.

There have been many past studies conducted in terms of group work in language learning among students. Chiriac (2014) conducted a study aimed to enhance current knowledge and insights about the key elements behind successful group work in higher education. This research focuses on students' experiences of group work and learning in groups. A primary objective is to give university students a voice by highlighting their positive and negative perspectives and how they evaluate learning in group settings. Additionally, the study seeks to understand why some group work experiences are positive and lead to successful learning, while others do not. Data were gathered through a study-specific questionnaire that included both multiple-choice and open-ended questions, distributed to students across various study programs at two Swedish universities. This study is based on a reanalysis with a significant emphasis on qualitative analysis. The findings indicate that most students found group work to facilitate learning, particularly in academic knowledge. Three crucial prerequisites for effective group work were identified: learning, study-social function, and organization. These factors were discussed as they either facilitate or hinder students' learning and affect their overall group work experiences.

Next, the study by Min, Mei and Chee (2014) also looked at group work in language learning but specifically on the relationship between different stages of group work. The study mentioned that the various stages of group work are interconnected in a constructive progression, indicating that these stages are not distinct but rather positively linked. The study by Min, Mei and Chee (2014) is done to understand how Malaysian students perceive the different stages of group work and to examine the relationships between these stages. The quantitative study was conducted involving 165 university students enrolled in a Mandarin as a Foreign Language course. This study applied Tuckman's Model to analyze the stages of group development. The findings have highlighted that during the forming stage, students are inclined to assign specific roles to team members and outline the goals and tasks to be completed. In the storming stage, where discussions occur, the results indicate that students believe the team leader should actively contribute to the tasks. The norming stage reveals that students aim to achieve harmony by avoiding conflict and accepting one another as team members. In the performing stage, students agree that they accomplished a significant amount of work and perceive their group interactions as positive and cooperative, fully recognizing each other's strengths and weaknesses. The study also shows that the various stages of group work are positively linked. From the outcomes, it is essential to understand these connections as it can be beneficial to guide effective groups.

Similarly, Siti Fauziana et al. (2023) conducted a study aimed to examine the influence of these four stages on group work and the relationships between them. A quantitative approach was utilized, employing purposive sampling. An online questionnaire with 29 items was distributed to 200 undergraduate students at Universiti Teknologi Mara, Shah Alam, Malaysia. The questionnaire was divided into four sections, each designed to capture respondents' experiences throughout the four stages of Tuckman's Model. The study also found that all stages positively influence students' group work experiences. Additionally, there is a moderate positive relationship between the forming and norming stages, as well as between the forming and performing stages. These findings may imply that educators should monitor these stages as students progress through them during group work and provide guidance to enhance the effectiveness of group work in ESL classrooms.

### 2.3 Conceptual Framework

Class discussions have many advantages. One obvious benefit of class interaction is improved communication skills (Rahmat, 2020). During class discussions, team members work together to benefit from the communication. However, the interaction during the discussions can also cause conflicts. Figure 1 illustrates the conceptual framework of the research. This study examines the impact of group conflicts. Tuckman (1965) identified the conflict stage as the storming stage. Tuckman (1965) asserts that the initial stage is the forming stage, which is thereafter followed by the storming stage. Subsequently, the norming stage is pursued, culminating in the performing stage.

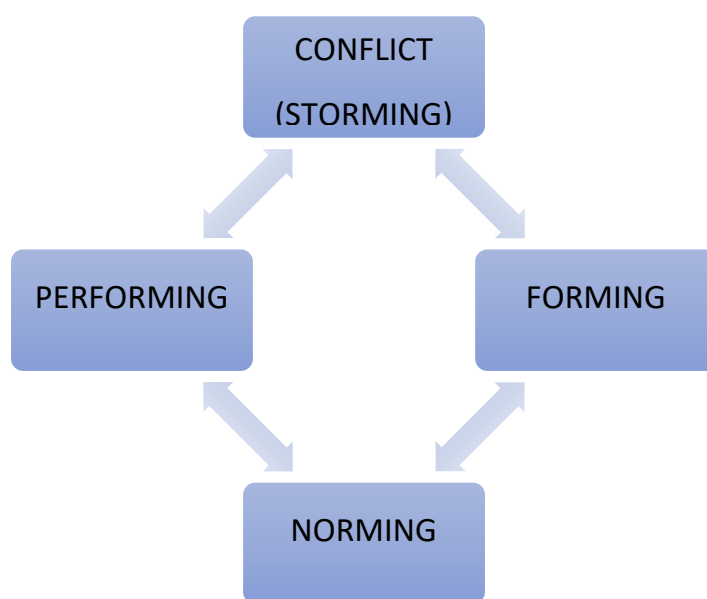


Figure 1- The study's conceptual framework-The Influence of Conflicts in Group Interactions

### 3.0 METHODOLOGY

This study employs quantitative methods to investigate the elements that motivate undergraduate students to learn. A targeted sample of 178 people completed the survey. The survey instrument employed is a 5-point Likert scale, based on Tuckman's (1965) framework, to identify the variables presented in Table 1. There are four sections in the survey. Section A contains information regarding the demographic profile. Section B consists of a total of seven items throughout the Forming Stage. Section C consists of six things during the Storming Stage. Section D consists of eight things during the Norming Stage, while Section E consists of eight pieces during the Performing Stage.

Table 1- Distribution of Items in the Survey

Section	Stage (Tuckman, 1965)	Items	Cronbach Alpha
B	FORMING	7	0.643
C	STORMING	6	0.725
D	NORMING	8	0.732

E	PERFORMING	8	0.858
		29	0.891

Additionally, Table 1 displays the survey's dependability. The analysis indicates a Cronbach alpha coefficient of 0.891, so demonstrating the instrument's dependability. Additional analysis utilising the Statistical Package for the Social Sciences (SPSS) is conducted in order to present the findings and address the research issues of this study.

## 4. FINDINGS

### 4.0 Findings for Demographic Profile

Table 2: Percentage for Demographic Profile

Q1	Gender	Male	Female
		68%	32%
Q2	Discipline	Science & Technology	Social Science
		42%	58%

The gender and discipline distribution of the respondents who participated in the study is provided in Table 2. Females accounted for 32% of the participants, while Males constituted the majority with 68%. This gender breakdown highlights a significant gender disparity, where males are more represented than females in the studied sample. The findings also revealed that, among the respondents, the highest proportion, constituting 58%, identified themselves with the Social Science discipline, while 42% associated with the Science and technology discipline.

### 4.1 Findings for Forming Stage

This section provides data to address study question 1: What is the perception of learners regarding the process of forming phases in group work?

Table 3: Mean for FORMING STAGE

ITEM	MEAN
SECTCaFQ1 At the start, we try to have set procedures or protocols to ensure that things are orderly and run	4.1
SECTCaFQ2 At the start, we assign specific roles to team members	4.5
SECTCaFQ3 At the start, we are trying to define the goal and what tasks need to be accomplished.	4.5
SECTCaFQ4 At the start, team members are afraid or do not like to ask others for help.	3.0
SECTCaFQ5 At the start, team members do not fully trust the other team members and closely monitor others who are working on a specific task.	2.8
SECTCaFQ6 At the start, it seems as if little is being accomplished with the project's goals.	3.8
SECTCaFQ7 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

Based on Table 3 above, the highest mean score of 4.5 was recorded for SECTCaFQ2, suggesting unanimous agreement among learners that in the forming stage, specific roles are assigned to team members at the start of the group work. Similarly, SECTCaFQ3 also obtained

a mean score of 4.5, indicating that participants agreed on the importance of defining project goals and tasks early on. SECTCaFQ1 follows closely with a mean score of 4.1, indicating agreement on the significance of having set procedures or protocols to ensure order and smooth operation of the group task. On the other hand, SECTCaFQ5 received the lowest mean score of 2.8, reflecting a shared impression that team members do not fully trust each other from the start of the project and may closely monitor others working on specific tasks. Following this, SECTCaFQ4 obtained the second-lowest mean score of 3.0, indicating that some team members hesitated or feared asking for help during the forming stage. SECTCaFQ6, with a mean score of 3.8, suggests that there may be a perception of minimal progress towards the project's goals initially. However, SECTCaFQ7 received a mean score of 3.9, indicating that despite uncertainties about the project's goals, learners express excitement and pride in being members of the team during the forming stage. These findings highlight both positive and challenging aspects of the forming stage.

#### 4.2 Findings for Group Conflicts (Storming Stage)

This section provides data to address research question 2 - What is the perception of learners regarding group conflicts during the storming stage of group work?

Table 4: Mean for Storming Stage

ITEM	MEAN
SECTCbSQ1 During discussions, we are quick to get on with the task on hand and do not spend too much time in the planning stage.	3.6
SECTCbSQ2 During discussions, the team leader tries to keep order and contributes to the task at hand.	4.2
SECTCbSQ3 During discussions, the tasks are very different from what we imagined and seem very difficult to accomplish.	3.3
SECTCbSQ4 During discussions, we argue a lot even though we agree on the real issues.	2.8
SECTCbSQ5 During discussions, the goals we have established seem unrealistic.	2.6
SECTCbSQ6 During discussions, there is a lot of resisting of the tasks on hand and quality improvement approaches.	3.2

Based on Table 4 above, SECTCbSQ2 achieved the highest average score of 4.2, suggesting that the team leader tries to maintain order in the storming stage and actively contributes to the job during discussions. This underscores the significant impact of competent leadership during the storming phase. SECTCbSQ1 obtained the second-highest mean with an average score of 3.6, indicating that the group prefers to proceed quickly with the task at hand, minimising time spent in the planning stage. Conversely, SECTCbSQ5 and SECTCbSQ4 obtained the lowest average scores of 2.6 and 2.8, respectively. SECTCbSQ5 posits that the established goals may seem unrealistic to learners during discussions. Meanwhile, SECTCbSQ4 indicates disagreements arise during discussions, even when there is agreement on the real issues. Lastly, SECTCbSQ6 and SECTCbSQ3 received mean scores of 3.2 and 3.3, respectively. SECTCbSQ6 reflects some resistance to the tasks at hand and quality improvement approaches during discussions. At the same time, SECTCbSQ3 reveals that the tasks discussed may differ significantly from initial expectations and could be perceived as challenging to accomplish. These findings provide insights into learners' experiences and challenges during the storming stage of group work, underscoring the crucial significance of leadership and drawing attention to possible causes of conflict that could affect collaboration and the attainment of goals during online group work.



### 4.3 Findings for Norming Stage

This section provides data to address research question 3- What is the perception of learners towards the norming stage in group work?

Table 5: Mean for Norming Stage

ITEM	MEAN
SECTCcNQ1 In the group, we have thorough procedures for agreeing on our objectives and planning the way we will perform our tasks.	4.1
SECTCcNQ2 In the group, we take our team's goals and objectives literally, and assume a shared understanding.	4.2
SECTCcNQ3 In the group, the team leader ensures that we follow the procedures, do not argue, do not interrupt, and keep to the point.	4.0
SECTCcNQ4 In the group, we have accepted each other as members of the team.	4.4
SECTCcNQ5 In the group, we try to achieve harmony by avoiding conflict.	4.5
SECTCcNQ6 In the group, the team is often tempted to go above the original scope of the project.	3.4
SECTCcNQ7 In the group, we express criticism of others constructively	3.2
SECTCcNQ8 In the group, we often share personal problems with each other.	2.8

Table 5 reveals that the highest mean ( $M = 4.5$ ) is generated for item SECTCcNQ5. The item suggests a strong inclination towards harmony by avoiding conflict. In addition, the item SECTCcNQ4 is evident as the second-highest mean score ( $M = 4.4$ ). This indicates that group members have accepted each other as an integral part of the team in group work. The data also demonstrated the high mean scores for SECTCcNQ1 (4.1) and SECTCcNQ2 (4.2). This shows that group work strongly emphasises establishing thorough procedures for objectives and shares a common understanding of team goals. However, the lowest score was generated for item SECTCcNQ8, with a mean score of 2.8. The group may need to be more open in sharing personal problems with the group members.

### 4.4 Findings for Performing Stage

This section provides data to address research question 4- What is the perception of learners towards the performing stage in group work?

Table 6: Mean for Performing Stage

ITEM	MEAN
SECTCdPQ1 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
SECTCdPQ2 In the end, we do not have fixed procedures, we make them up as the task or project progresses.	3.6
SECTCdPQ3 In the end, we enjoy working together; we have a fun and productive time.	4.3
SECTCdPQ4 In the end, the team leader is democratic and collaborative.	4.2
SECTCdPQ5 In the end, we fully accept each other's strengths and weakness.	4.4
SECTCdPQ6 In the end, we are able to work through group problems.	4.4
SECTCdPQ7 In the end, there is a close attachment to the team.	4.0
SECTCdPQ8 In the end, we get a lot of work done.	4.6

The data presented in Table 6 indicates that item SECTCdPQ8 has the highest mean score ( $M = 4.6$ ). The group work is highly productive, and much work is done during the performing stage. The high mean score was also revealed for the items SECTCdPQ1, SECTCdPQ5, and SECTCdPQ6, with a mean score of 4.4. Item SECTCdPQ1 (4.4) indicates that, during the performing stage, group members feel that they are all together and that members share responsibilities for both success and failure. As for the item SECTCdPQ5, the group members fully accept each other's strengths and weaknesses. Item SECTCdPQ6 demonstrates that they could work through group problems in group work. On the contrary, the lowest mean score is for SECTCdPQ2. It suggests that the team does not strictly adhere to fixed procedures during the performing stage, preferring a more adaptive approach by making procedures as the task or project progresses.

#### 4.5 Findings for Relationship Between Group Conflicts and All Stages in Group Work.

This section presents data to answer research question 5- Is there a correlation between group conflicts and all other stages of group work? The data was analysed using SPSS for correlations to determine if there was a significant association between the mean scores. According to Jackson (2015), the coefficient is significant at the .05 level, and a positive correlation is measured on a 0.1 to 1.0 scale. A weak positive correlation ranges between 0.1 to 0.3, a moderate positive correlation from 0.3 to 0.5, and a strong positive correlation from 0.5 to 1.0. The following analysis explores the relationships between the stages of group work according to Tuckman (1965), focusing on how conflicts within groups correlate with the forming, storming, norming, and performing stages.

Table 7: Correlation between Forming and Storming

		FORMING	STORMING
FORMING	Pearson Correlation	1	.527**
	Sig. (2-tailed)		<.001
	N	178	178
STORMING	Pearson Correlation	.527**	1
	Sig. (2-tailed)	<.001	
	N	178	178

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

Table 7 demonstrates a correlation between the forming and storming stages. The correlation study reveals a strong and statistically significant relationship between forming and storming ( $r=.527^{**}$ ). Additionally, the p-value is found to be .000, indicating a very significant association. Consequently, there exists a robust correlation between the processes of forming and storming.

Table 8: Correlation between Forming and Norming

### Correlations

		FORMING	NORMING
FORMING	Pearson Correlation	1	.562**
	Sig. (2-tailed)		<.001
	N	178	178
NORMING	Pearson Correlation	.562**	1
	Sig. (2-tailed)	<.001	
	N	178	178

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

Table 8 shows there is an association between forming and norming stages. Correlation analysis shows that there is a highly significant association between forming and norming ( $r=.562^{**}$ ) Moreover, ( $p=.000$ ). This means that there is also a strong positive relationship between forming and norming.

Table 9: Correlation between Performing and Norming

### Correlations

		PERFORMIN G	NORMING
PERFORMING	Pearson Correlation	1	.680**
	Sig. (2-tailed)		<.001
	N	178	178
NORMING	Pearson Correlation	.680**	1
	Sig. (2-tailed)	<.001	
	N	178	178

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

Table 9 shows there is an association between performing and norming stage. Correlation analysis shows that there is a high significant association between performing and norming stage ( $r=.680^{**}$ ) Moreover, ( $p=.000$ ). This means that there is also a strong positive relationship between the performing and norming stages.

Table 10: Correlation between Performing and Storming

### Correlations

		PERFORMIN G	STORMING
PERFORMING	Pearson Correlation	1	.289**
	Sig. (2-tailed)		<.001
	N	178	178
STORMING	Pearson Correlation	.289**	1
	Sig. (2-tailed)	<.001	
	N	178	178

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

Table 10 shows there is an association between the performing and storming stages. Correlation analysis shows that there is a low significant association between performing and storming stage ( $r=.289^{**}$ ) Moreover, ( $p=.000$ ). This means that there is also a weak positive relationship between the performing and storming stages.

## **5. CONCLUSION**

### ***5.1 Summary of Findings and Discussions***

This study sought to investigate the way in which learners perceive the dynamics of group work at different levels, and how these views impact educational environments. The study examined learners' perceptions of the stages of group work: forming, storming, norming, and performing.

During the initial stage, the participants highlighted the need of establishing explicit protocols, identifying objectives, and assigning responsibilities, which is consistent with previous studies conducted by Belbin (1981) and Cohen (1994). During the storming phase, it became evident that effective leadership had a major role in resolving conflicts, which aligns with the conclusions drawn by Hackman (1990).

The norming stage emphasised the significance of developing group norms and procedures while promoting inclusive communication, reflecting Tannenbaum's (2022) research on group cohesion. During the performing stage, participants saw a significant increase in productivity and happiness when working together, placing a strong emphasis on teamwork and accepting each other's skills and weaknesses. These findings align with Hackman's (1987) research.

Furthermore, this study investigated the correlation between group conflicts and cognitive-emotional traits throughout these phases, utilising the insights offered by Jackson (2015).

### ***5.2 Implications for Teaching and Suggestions for Future Research in Education***

This study offers special insights into the dynamics of group work, providing implications for instructional approaches and prospects for further research. When it comes to teaching methods, it is essential to set explicit guidelines and support mechanisms when forming groups. This helps explain the responsibilities and objectives, making it easier for the group members to collaborate effectively.

Acquiring proficient leadership and conflict resolution abilities is crucial when managing the storming phase. Enhancing group norms and inclusivity improves unity and productivity during the norming stage. Commending accomplishments throughout the execution phase strengthens the collective dynamics and morale.

Essential areas for future research include investigating variations in group dynamics, examining the influence of technology on collaboration, and undertaking longitudinal studies. These initiatives will offer customised interventions to increase the results of collaborative learning and boost teaching methods in educational environments.

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## **AUTHORS' CONTRIBUTION**

NH carried out the introduction and conclusion section. WS and NS collected and refined the data and performed the data analysis using SPSS. NK and MD also wrote the literature review

section. NH also wrote the discussion and implication sections. All authors read and approved the final manuscript.

## CONFLICT OF INTEREST

None declared

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