

Exploring The Relationship Between All Stages In Group Work

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Abstract

Group work is strongly related to group development and is linked with many aspects, such as professionalism and efficiency in teams. Group work in higher education is a popular teaching strategy due to its ability to engage students and provide meaningful collaborative learning experiences through online and face-to-face learning. Group work allows students to tackle complex tasks that might be challenging to accomplish individually. It promotes the development of critical skills such as communication, teamwork, time management, and problem-solving. The purpose of this research is to explore the implementation of a group work approach in the classroom. The research was determined using a quantitative survey. The model reflects the stages of forming, storming, norming, performing of 107 respondents of undergraduate students studying from three multi disciplines at public university in Malaysia. In this study, all stages were found to have a positive effect on students' group work experience. Additionally, it is also found that there is moderate positive relationship between the stages storming and norming as well as norming and performing. Educators should monitor students as they progress through stages during group work and provide appropriate guidelines to improve the efficacy of group work in the classroom.

Keywords: Relationship, Forming, Storming, Norming, Performing.

Introduction

Background of Study

Group work can take various forms, including discussions, projects, presentations, research, problem-solving, and decision-making activities. It typically requires group members to communicate, cooperate, coordinate, and support each other. Group work aims to enhance

learning, skill development, creativity, innovation, and productivity, while also encouraging a sense of community, collaboration, and shared responsibility among participants. The success of group work involves assessing group's dynamics such as trust, motivation, and cohesion among members which contribute to the achievement of goals, quality of collaboration, individual growth, and satisfaction (Othman et al., 2023). The group should comprehend the connection between innovation, cooperation, and creativity to provide a conducive environment.

Guiding a diverse group of individuals into a highly productive team is complex and needs organization, leadership, and commitment. Common challenges encountered in group work such as navigating communication barriers, resolving conflicts, and ensuring equitable participation. According to Chang & Kang (2016), online collaboration can be difficult due to its asynchronous nature, competency in technology, absence of physical interaction and content management. Another research done by Popov et al (2012) discussed issues in multicultural student group work, as perceived by students, including free-riding, inadequate English language abilities, and poor communication among students. To navigate the challenges of group work effectively, Tuckman's popular model "stages of development of performing groups" offers a framework for understanding the difficulties among groups (Isaac & Tormey, 2015). The Tuckman's model which was created in 1965, involving the stages of forming, storming, norming, and performing. Generally, the Tuckman model was used to analyze the strengths and weaknesses of the processes implemented by the team. Understanding Tuckman's model of group development can help improve the overall effectiveness of group work in an organization. Overall, group work assignments require team members to work together to accomplish a common goal or complete a task. Group work success can result in benefits including higher learning, improved problem-solving skills, increased creativity, and better communication among team members.

Statement of Problem

Previous study on group work has continually highlighted its advantages and beneficial effects. As can be seen from the literature, previous studies demonstrated the effects of leadership on communication barriers, knowledge sharing and expressive ties among group members, and team learning (Chen & Agrawal, 2017). Gill et al (2020) indicates that the performance of gender diverse teams is significantly affected by instrumental contributions. The author proposed that training is necessary to diminish conflict, build trust, and appreciate all socio-emotional contributions. However, some of the issues arise particularly in relation to leadership. Students formed by the tutor in the final stage of group development faced more challenges related to lack of leadership and personality clashes (Soetanto & MacDonald, 2017). Next, less attention has been focused on obstacles experiences that students perceive while working in groups. The study focused on the viewpoint of team members' involvement in conflicts and the type of relationships between them (Hood et al., 2017). Therefore, teamwork is a great area for scholars and should be researched further. Recognising and navigating the potential and difficulties within groups can enhance collaboration, performance and group effectiveness.

Objective of the Study and Research Questions

This study is done to explore perception of learners on their use of learning strategies. Specifically, this study is done to answer the following questions;

- How do learners perceive the forming stage in group work?

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

Literature Review

Drawbacks and Advantages of Group Work

Undoubtedly group work provides a stretch of advantages for students that it has become more and more popular in educational settings. Working well in a group is regarded as a critical talent in the world of connectivity today, not only for academics but also for those working in a professional and social setting. Through an analysis of the diverse benefits of collaborative learning, both instructors and students can acquire significant understanding of the advantageous influence of teamwork within educational settings. When students work in groups rather than alone and using different study techniques, they are more cooperative and positive to one another (Prets, 2000 in Roskosa & Rupniece, 2016). According to a study conducted by Benson et al (2019), he found that group work is appropriate to be used for each course he studied. This is to say, that group work can be applied to a myriad of different fields in education. It was also found that group work improves students' attitude towards learning. This was proven by a study by Situmorang (2021) where the participants believed that group work was beneficial because it taught them to interact with others, accept responsibility, and solve problems together.

While working in groups has numerous advantages, there can be many drawbacks as well. First, it could cause ostracism (where a team member feels excluded from the group), unequal work distribution (where a team member may not contribute) Danowitz (2017); Taqi & Nouh (2014), interpersonal conflict (resulting from a difference in viewpoint and degree of contribution), and tardiness on deliverables (when a team member is not held responsible for finishing work on time or when decision-making takes too long in an effort to reach a consensus) as stated by (Danowitz, 2017). According to Situmorang (2021) group work could also affect individuals as a group in which When a single member of the group is in charge of the group, the performance represents the level of that individual rather than the group as a whole. Apart from the disadvantages, Taqi and Nouh (2014) listed other issues such as, some students may receive acclaim for performing little effort while others do the majority of the work. Additionally, different students' tendencies may prevent them from accepting group commands while some other group members may refuse to collaborate with others, and noise in the classroom is one of the most significant obstacles that prevents many teachers from adopting group work.

Stages in group Work

Fundamentally, there are four stages in Tuckman's model of group work and a fifth stage was added according to (Vaida and Serban, 2021). Forming, the first stage from the model is defined as a lack of position clarity and a need to determine the capabilities and desires of other team members. At this stage of the model, most teams choose a leader and establish opinions on the other members and the assigned tasks. Next, the second stage, Storming, is characterized by when leaders face inherent challenges, including compromises, uncertainty, and emotional and relational factors that can lead to disintegration. The third stage, Norming, is when the team establishes norms, roles, and methods to develop the task.

Discontent typically decreases and the team's style is now accepted. The fourth stage, Performing, the team is typically characterized by their high efficiency and coordination within the team as most of the processes go smoothly and the team members start to bond better among them. Tuckman later in the years, added a fifth stage, Adjourning, which is essential to comprehend how the model foresees a group's separation and the processes that go along with it. The group evaluates the project's results and conducts a self-evaluation and analysis during the adjourning phase. A mix of feelings involved, as the project team preparing to leave and this may involve grieving and separation anxiety in addition to a sense of satisfaction from tasks completion (Nativg, 2016).

Past Studies on Group Work

There have been many past studies on the effectiveness and how Tuckman's model is to be implemented in a classroom setting. A study by Jones (2019) was conducted to investigate the possibility of this model to be implemented in a classroom setting and its implications on students. The study was participated by 25 students from a class and then asked to perform a negotiation role-play. It was found that the Tuckman Model is possible to be implemented in a class setting with the stages except the adjourning stage which is inappropriate for the assigned task (role-play). The model is relevant at the corporate level and is highly beneficial in terms of students' progress, skills, behavior, emotions, flexibility, adaptability among others.

In a different study by Zakaria et al (2023) an online questionnaire was shared to a number of 200 respondents from a local university in eliciting undergraduates' experience of the four stages of the Tuckman Model. The study returned a positive finding in all stages of the model, yet, this study suggested that students might need guidance as there was found a moderate relationship between the stages of forming and norming and between forming and performing.

Another local study from Sazali et al (2022) was set to determine the benefits of group work, but in an online setting. A total of 481 respondents from a public local university in Malaysia were involved in the quantitative survey. It was found that online group work improves oral interaction among peers, encourages tasks completion with the assistance of their group members. Group work does not only enhance their language proficiency and comprehension of non-verbal communication, but also expands their knowledge through collaborative learning.

Social interaction motivates students to finish tasks with the support of their group members, improves their language skills and understanding of non-verbal cues, increases their knowledge by learning argumentative and problem-solving skills in communication.

As seen from the above research much of the literature has been conducted in different contexts of learning such as in language learning, corporate level and engineering field not from local settings. Therefore, it is crucial to investigate how students from diverse cultures and those from alternative educational settings might yield comparable results using the same group work model.

Conceptual Framework

The main reason why group work are designed in classrooms is because more people can complete the task together. Nevertheless group works allows learners to gain information and also improve on their communication strategies (Rahmat, 2020). This study (refer to Figure 1) is rooted from Tuckman’s stages of group work. The stages are forming, storming, norming and performing.

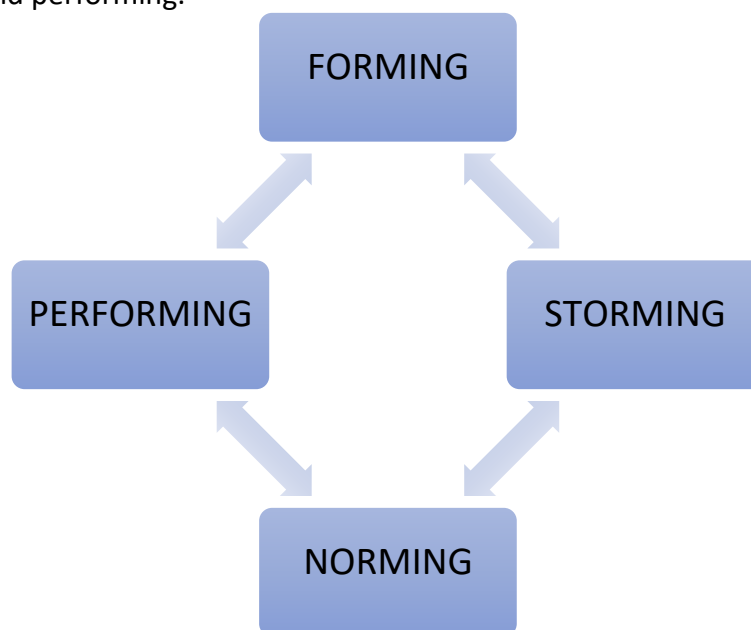


Figure 1- Conceptual Framework of the Study
Relationship between all stages in group work

Methodology

This quantitative study is done to explore group dynamics among learners. A purposive sample of 107 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Tuckman (2016) to reveal the variables in table 1 below. The survey has 5 sections. There are items on demographic profile in Section A. Items regarding formation are found in Section B. This section's content responds to the research question: What is the student perspective on the group work formation phase? There is a storming item in Section C. The information in this section addresses the following study question: How do students view the storming stage of group work? Within Section D is the norming item. The information in this section addresses the following study question: How do students view the norming stage of group work? The final item in section E is about performing. Data to address the research question: How do students view the performing stage in group projects? is presented in this part.

Table 1
Distribution of Items in the Survey

SECTION	STAGE	Items	Cronbach Alpha
B	FORMING	8	.653
C	STORMING	7	.735
D	NORMING	8	.747
E	PERFORMING	9	.823
		32	.883

Table 1 also shows the reliability of the survey. SPSS analysis reveals individual Cronbach alpha scores for each variable used in the study. The analysis shows a Cronbach alpha of 0.653 for section B- Forming, a Cronbach alpha of 0.735 for section C - Storming, a Cronbach alpha of 0.747 for section D - Norming, a Cronbach alpha of 0.823 for section E - performing; thus, revealing good reliability for three variables in 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 2

Percentage for Gender

1	Male	47%
2	Female	53%

Table 2 shows the distribution of gender. Based on gender showed that 47% are male and 53% are female. This represented the respondent by female is higher than male.

Table 3

Percentage for Discipline

1	Science & Technology	13%
2	Social Sciences	29%
3	Engineering	58%

Table 3 shows the percentage of discipline. Based on discipline data showed that 13% are from the Faculty of Science and Technology, 29% are from the Faculty of Social Science while 58% are from the Faculty of Engineering.

Table 4

Percentage for level of study

1	Pre-Diploma	1%
2	Diploma	75%
3	Degree	24%

Table 4 shows the percentage of levels of education. There are three levels for education: pre diploma, diploma and degree. According to the levels of education shown, the highest percentage is from diploma levels (75%) followed by degree levels (24%) and pre- diploma levels (1%).

Findings for Forming

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

Table 4

Mean for FORMING STAGE

ITEM	Mean
SECTCaFQ1 Before we begin any group activities, we set rule or procedures to ensure that everything run smoothly.	4.1
SECTCaFQ2 Before we begin any group activities, we assign specific roles to team members 4	4.4
SECTCaFQ3 Before we begin any group activities, we determine the goal.	4.2
SECTCaFQ4 Before we begin any group activities, we determine what tasks need to be accomplished.	4.5
SECTCaFQ5 Before we begin any group activities, our team members may be unwilling to seek help from others.	3
SECTCaFQ6 Before we begin any group activities, team members do not trust each other and closely monitor others on a specific task.	2.6
SECTCaFQ7 At the beginning, it seems like we are making little progress to achieve the goal of the task.	3.7
SECTCaFQ8 At the beginning, even if we are unsure about the project's goals and issues, we are excited and proud to be on the team.	4

The survey data shown in Table 4 shows that the mean values of the forming stage show some significant insights. The maximum score of 4.5 is awarded for determining which tasks must be completed before beginning any activities. It was followed by a mean score of 4.4, which assigned roles to each team member before they begin. Conversely, figuring out the goal results in a score of 4.2. Next, rules or procedures are established to guarantee that everything will go as planned, with a mean score of 4.1. In addition, the team initially received a score of 4.0 since every member felt enthusiastic and happy to be a part of it, despite their ignorance of the project's objectives and problems. Furthermore, the initial score of 3.7 indicates that there appears to be little progress being made toward completing the assignment. Before starting any group activity, all of the participants may be reluctant to offer assistance to others with a mean score of 3.0. Finally, they lack mutual trust and attentively watch one another while working on a task before they begin where the mean score is 2.6.

Findings for Storming

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

Table 5

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.	3.5
SECTCbSQ2 During discussions, the team leader tries to keep order	3.9
SECTCbSQ3 During discussions, the team leader contributes to the task at hand.	4
SECTCbSQ4 During discussions, the tasks are very different from what we imagined and seem very difficult to accomplish.	3.3
SECTCbSQ5 During discussions, we argue a lot even though we agree on the real issues.	3.2
SECTCbSQ6 During discussions, the goals we have set seem unrealistic.	3
SECTCbSQ7 During discussions, there is a lot of resistance to the tasks at hand and approaches for quality improvement.	3.5

According to the survey results displayed in Table 5, the storming stage mean values provide some important information during group discussions. The team leader who makes a contribution to the job at hand receives the maximum score of 4. A mean score of 3.9 came next, assigning the team leader responsibilities to maintain order among all the duties. During discussion, everyone is quick to get on with the job at hand and does not waste too much time in the planning stage and there is lots of disagreement to the current tasks and strategies to better quality, sharing the same mean value of 3.5. The next activities have a mean value of 3.3 where the tasks are much different from what they had anticipated and appear to be quite tough to complete. Furthermore, despite their agreement on the important topics, all members debate a great deal, as seen by the mean value of 3.2. Finally, with a mean score of 3.0, the objectives they have set seem impossible to achieve.

Findings for Norming

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

Table 6

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.	3.9
SECTCcNQ2 In the group, we take our team's goals and objectives literally, and assume a shared understanding.	4
SECTCcNQ3 In the group, the team leader ensures that we follow the procedures, do not argue, do not interrupt, and keep to the point.	3.8
SECTCcNQ4 In the group, we have accepted each other as members of the team.	4.1
SECTCcNQ5 In the group, we try to achieve harmony by avoiding conflict.	4.2
SECTCcNQ6 In the group, the team is often tempted to go above the original scope of the project.	3.8
SECTCcNQ7 In the group, we express criticism of others constructively	3.4
SECTCcNQ8 In the group, we often share personal problems with each other.	3

According to the survey data in Table 6, the mean values for the norming stage show several key insights. The highest mean score of 4.2 indicates a strong tendency to avoid conflict to achieve harmony. Additionally, with a mean score of 4.1, the acceptance among team members is remarkable. Along with this, the group showed a shared understanding of goals and objectives with a score of 4.0. In the moderate scores, there are three other findings, with a score of 3.9, the group indicates that planning and agreement on objectives are slightly lower but still suggest a structured approach to teamwork. Next, the moderate score of 3.8 shows that the group leader plays a key role in upholding structure and discipline, which helps contribute to a more organized and efficient working environment. Also with a score of 3.8, the group tends to exceed the original project scope. On the other lower end, two questions in the survey, with a score of 3.4, received slightly lower constructive criticism, while sharing personal problems had the lowest score of 3.0.

Findings for Performing

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

Table 7

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	4.2
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.	4.2
SECTCdPQ4 In the end, the team leader is democratic.	3.6
SECTCdPQ5 In the end, the team leader is collaborative.	4.1
SECTCdPQ6 In the end, we fully accept each other's strengths and weakness.	4.3
SECTCdPQ7 In the end, we are able to work through group problems.	4.2
SECTCdPQ8 In the end, there is a close attachment to the team.	4.1
SECTCdPQ9 In the end, we get a lot of work done.	4.3

According to the survey data presented in Table 7, these are the mean values for the performing stage. The highest score of 4.3 indicates that the team can effectively resolve problems and consistently get work done. This is followed by a score of 4.2, indicating that the team enjoys working together, suggesting that they are likely to have fun while being productive. This also suggests that the team can effectively work through group problems. The next question with a mean score of 4.1 indicates that the team perceives leadership as collaborative and responsible towards success, reflecting the team's sense of attachment. There is a perception that leadership is democratic. Likewise, the team's flexibility indicates a certain reliance on structured processes. Both questions had the same mean score of 3.6.

Findings for Relationship between

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, data is analysed using SPSS for correlations. Results are presented separately in table 8, 9, 10 and 11 below.

Table 8
Correlation between Forming and Storming

Correlations

		FORMING	STORMING
FORMING	Pearson Correlation	1	.495**
	Sig. (2-tailed)		.000
	N	107	107
STORMING	Pearson Correlation	.495**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

Table 8 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($r=.495^{**}$) 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 9
Correlation between Storming and Norming

Correlations

		STORMING	NORMING
STORMING	Pearson Correlation	1	.436**
	Sig. (2-tailed)		.000
	N	107	107
NORMING	Pearson Correlation	.436**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

Table 9 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($r=.436^{**}$) 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 10
Correlation between Norming and Performing

		NORMING	PERFORMING
NORMING	Pearson Correlation	1	.696**
	Sig. (2-tailed)		.000
	N	107	107
PERFORMING	Pearson Correlation	.696**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

Table 10 shows there is an association between norming and performing stages. Correlation analysis shows that there is a moderate significant association between norming and performing stages($r=.696^{**}$) 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 norming and performing stages.

Table 11
Correlation between Performing and Forming

		PERFORMING	FORMING
PERFORMING	Pearson Correlation	1	.359**
	Sig. (2-tailed)		.000
	N	107	107
FORMING	Pearson Correlation	.359**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

Table 11 shows there is an association between performing and forming stages. Correlation analysis shows that there is a low significant association between performing and forming stages($r=.359^{**}$) and ($p=.000$). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a weak positive relationship between performing and forming stages.

Conclusion*Summary of Findings and Discussions*

The current research investigates how learners' interactions are impacted by four stages in Tuckman's Model (forming, storming, norming and performing) on a group work. During the forming stage, learners constantly search for structure and clarity in terms of objectives, roles, and expectations of the group. Effective facilitation and support from instructors or facilitators can help address learners' concerns, foster positive group dynamics, and create a conducive environment for collaboration and learning. This process is essential as it will determine the success and failure of group work. From the second research question, learners are also impacted by the storming stage in which the role of moderator in contributing to the task obtains the highest mean score. The moderator plays an important role in facilitating group work by enabling discussions to achieve productive outcomes. With supportive involvement of the moderator and active participation from group members, the discussion may contribute to effective decisions. The norming stage, team members collaborate to develop harmony and guidelines to efficiently complete tasks. At this stage, group members begin to resolve conflicts, appreciate each other's perspectives, and build a trust in each other's capabilities. The finding also reveals that the performing stage is characterized by unity, teamwork and productivity, making it a great time for doing tasks efficiently and achieving significant results. Tuckman proposed a linear development pattern, starting with forming and ending with performing, suggesting that a group must successfully navigate previous stages before entering new levels (Kiweewa et al., 2018). Therefore, the Tuckman's model is useful for assessing student growth, skills, behaviour, emotions, flexibility, adaptability, and adjustability in various situations, interactions with different cultures, and case scenarios (Jones, 2019).

This paper offers significant contributions to the group work literature. Firstly, it synthesizes Tuckman's model and recent research, providing a comprehensive understanding of the stages of group work. Then, it emphasizes the need for more flexible, context-sensitive approaches to group work. This perspective calls for flexible approaches to understanding and managing group development, recognizing that groups may move back and forth between stages or experience them in a different order. Thirdly, it highlights the crucial role of leadership and power dynamics in shaping group evolution. Lastly, it provides practical implications for educators, trainers, and organizational leaders, providing insights into the effective management and facilitation of group work, as well as strategies for supporting groups in navigating the various stages of development. By integrating theory and practice, this paper aims to enrich discussions on group work optimization.

Pedagogical Implications and Suggestions for Future Research

From the findings, group work can significantly improve a student's learning experience. Group work helps students develop important soft skills including communication, teamwork, leadership, and solving problems. Supporting learners enhances student motivation and engagement with course material. Implementing group work strategies can enhance educators in teaching and learning and enhance student learning outcomes. The effectiveness of group work involves various aspects, including tangible outcomes and intangible elements associated with teamwork, education, development, and satisfaction within the team.

Future research on group work interactions could explore the impact on groups, create effective techniques to assess individual contributions, analyze group processes, and

elaborate on speaking patterns to help groups in enhancing their speaking skills. Additional research is required to comprehend the different mechanisms necessary to offer suitable and effective support to students in obtaining productive group skills.

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