Group Work Using Tuckman's Model: Exploring Teamwork through Salas's Model

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ABSTRACT

Higher education relies on team-based learning, but the same issue is characterized by frequent challenges like free-riding, conflict avoidance, and role ambiguity that often lower the advantages. This paper combines the developmental stages provided by Tuckman (1965) and the behavioural teamwork elements provided by Salas et al. (2005) to analyse the perceptions of teamwork and teamwork elements among two aspects of teamwork that are held by Malaysian undergraduates. The 29 item Lickert scale was structured and administered to 209 students (Years 1-3) in a Malaysian university that has collectivist traditions of harmony and respect. The four subscale reliability (Forming, Storming, Norming, performing) was satisfactory to excellent ($\alpha = .72–.89$; overall $\alpha = .90$). Descriptive statistics and correlations reveal that leadership, monitoring/ backup behavior, adaptability and team orientation have positive interrelationships ($\approx .44-.67$, $p < .001$). The results are consistent with the existing studies that already note the significance of trust, common set of norms, and formal procedures (e.g., Poort et al., 2020; Laaziz et al., 2023; Boud and Falchikov, 2006), yet present the perennial problems concerning goal realisticness and resistance in the storming stage (Velarde-García et al., 2023; Sonita and Febria, 2022). As an extension (robustness check), multiple regression indicates that norming and forming are the best positive predictors of performing, and unmanaged storming is negatively related to performance. Pedagogical implications can be clear team charters, feedback procedures that socialize criticisms, and moderate peer evaluation in order to reduce free-riding.

Keywords: teamwork; Tuckman; Salas; psychological safety; collaborative learning

INTRODUCTION

Background of Study

Team learning is part of university learning and develops communication, leadership, and problem-solving skills that are not limited to college but instead extended into the workplace (Johnson and Johnson, 2014; Bruce et al., 2018). In the context of the Malaysian universities, which are part of a bigger Asian collectivist culture, the assignments organized in a team format are a common approach in fulfilling the program outcomes regarding collaboration and communication. Nevertheless, the following conflicts are often reported by educators: lack of equal participation, framing, and refusal to openly criticize each other (Hall and Buzwell, 2013; Benning, 2024). These frictions are usually compounded when groups are initiated with no clear roles, objectives and procedures or when task conflict grows to relationship conflict.

In order to analyze these dynamics in a holistic manner, the paper combines the process perspective of group development as proposed by Tuckman (1965) with the behavioral perspective of teamwork as put forward by Salas et al. (2005). Tuckman imagines the way teams are formed (Forming, Storming, Norming, Performing), Salas et al. define what teams are doing well (team leadership, mutual performance monitoring and backup

behavior, adaptability, team orientation). We use these models on the Malaysian undergraduates to see the perception of the students towards the elements of teamwork and the interrelationships between the elements of teamwork that underlie group functioning.

Problem Statement

Existing literature reports the consistent barriers to student collaboration: time wastage, lack of clarity, and unequal involvement (Velarde-García et al., 2023), discomfort caused by poor teamwork strategies of collaboration (Sonita and Febria, 2022), and free-rider behaviour (Hall and Buzwell, 2013; Narmaditya et al., 2022; Benning, 2024). Similar findings based on parallel evidence of micro- and macro-task collaboration also demonstrate how inadequate accountability systems undermine the overall output (Xu et al., 2024). On the other hand, in a properly organized way, collaborative learning brings academic benefits, enhanced thinking, and development of professional skills (Gresch and Martens, 2019; King and Henderson, 2018; Boud and Falchikov, 2006; Otto et al., 2024). The presence of trust and psychological safety is critical as it allows voices and feedback to be stronger and enhance team cohesion and learning (Poort et al., 2020; Cossio-Torres et al., 2022).

The collectivist culture of Malaysian/Asian would offer dissent and critical feedback as the path to harmony which may be stifled at an earlier stage of teamwork. This cultural dynamic will increase the difficulties in the storming stage and hide the positive aspects of healthy conflict. It is against this backdrop that we combine Tuckman and Salas models to (i) record students perceptions on teamwork elements and (ii) hypothesise the correlation among the elements that indicate effective collaboration.

Research Objectives and Questions

Guided by the combined Tuckman-Salas framework, this study defines the following research objectives and research questions (RQs):

- **Objective 1:** To examine students' perceptions of team leadership in group work interactions.
  RQ1: How do learners perceive team leadership during group collaboration?

- **Objective 2:** To explore students' perceptions of mutual performance monitoring & backup behavior.
  RQ2: How do learners perceive mutual performance monitoring & backup behavior in group work?

- **Objective 3:** To investigate students' perceptions of adaptability and the social norms underpinning cohesion.
  RQ3: How do learners perceive adaptability during collaborative tasks?

- **Objective 4:** To evaluate students' perceptions of team orientation in relation to productivity and shared responsibility.
  RQ4: How do learners perceive team orientation (performing) in group work interactions?

- **Objective 5:** To determine relationships among teamwork components within the integrated framework.
  RQ5: Is there a significant relationship among leadership, monitoring/backup, adaptability, and team orientation?

LITERATURE REVIEW

Tuckman's Stages of Group Development

Tuckman (1965) suggested a stage sequence, which was Forming, Storming, Norming, Performing, and later, Adjourning was also added (Tuckman and Jensen, 1977). Educational studies empirically affirm the order, but indicate inconsistency in speed and transitions (Bonebright, 2010; Wheelan, 2005). Recent classrooms have emphasized the need to build advantages at the outset in terms of role clarity and common purpose (Awang, 2023; Kamarudin et al., 2023; Lim-Mei, 2024), and to manage the storming phase by control (Min, 2023; Yean, 2024). Norming unifies standards and identity (Seck et al., 2013; Coers et al., 2010), facilitates good performing in the context of open communication and well-organized tasks (Tuckman and Jensen, 1977; Nor, 2023).

Salas et al.'s Teamwork Components

Salas, Sims, and Burke (2005) defined a Big Five of teamwork behavior: team leadership, mutual performance monitoring, backup behavior, adaptability and team orientation that are based on shared mental model, closed-loop communication, and trust. These elements emphasize the aspect of interdependence: a good teamwork is not a combination of independent actions but a set of coherent actions functioning together. The usefulness of the framework in other fields is confirmed by subsequent research (Svensson et al., 2019; Espevik et al., 2021). Psychological safety is a social requirement that facilitates the prosperity of such behaviors (Cossio-Torres et al., 2022).

Integration of Tuckman and Salas

A combination of the two schools of thought gives a temporal-behavioral explanation: Tuckman is when difficulties arise (e.g., trust deficits in forming; conflict in storming), and Salas is how teams are effective (leadership, monitoring, backup, adaptability, orientation). This merging is particularly applicable in collectivistic settings, where harmony standards can suppress voice and criticism; formal leadership and definite norms can habitualize criticism without jeopardising relationships.

Drawbacks of Group Work in Higher Education

Empirical literature records a series of disadvantages in group-based learning especially in inadequate planning and coordination. Regularly, students note delays, confusion, and imbalance in tasks due to unequal preparedness and vague instructions (Velarde-García et al., 2023). These issues are complicated by the discomfort in communication and poor strategies of cooperation which diminishes the effectiveness of the group interaction (Sonita & Febria, 2022). Moreover, the lack of accountability and equality in the distribution of efforts remains a significant issue because of free-riding practices, which are shed light upon in some studies (Hall and Buzwell, 2013; Narmaditya et al., 2022; Benning, 2024). These problems are reflected in more comprehensive studies of collaboration as it is found that in situations where incentives and interdependence are not aligned correctly, groups are more likely to be less motivated and coordinated (Xu et al., 2024; Shelly et al., 2017). All these findings together indicate that structural ambiguity and social loafing are still sources of significant obstacles inhibiting the pedagogical potential of teamwork in higher education.

Benefits and Positive Outcomes of Group Work

On the other hand, there is a consistent body of research that shows that properly organized group work has a significant contribution to the cognitive and affective learning outcomes. Provided with roles, mutual respect, and reflective assessment, collaborative learning promotes improved academic performance and profound engagement (Gresch and Martens, 2019; King and Henderson, 2018; Zubiri-Esnaola et al., 2020; Otto et al., 2024). Professional and interpersonal skills such as communication, leadership, and problem-solving are also transferable and developed in the team-based activities (Exley, 2010; Maiden and Perry, 2011; Pitse and Ngozi, 2018; Light, 2001; Elgort et al., 2008). Besides that, engagement in cooperative learning conditions was also demonstrated to improve self-directed learning and metacognitive awareness to allow students to deal with tasks independently and flexibly (Wong and Kan, 2022; Khiat, 2017). The most important among these beneficial outcomes is trust and psychological safety, which produce open feedback, risk-taking, and innovation in team-based settings (Poort et al., 2020; Laaziz et al., 2023). Overall, early-structure, shared accountability, and mature group norms are scaffolded deliberately in maximizing the outcomes, which backs up the idea by Tuckman that cohesive teams go through systematic stages of development which is the driving force behind the design of the current study.

Conceptual Framework

The current analysis will combine the stages taken by Tuckman (Forming, Storming, Norming, Performing) and the components proposed by Salas et al. (leadership, monitoring/backing, adaptability, orientation) to identify how students perceive and how they relate to elements of teamwork. This integration makes the model capture the temporal development of teamwork (how teams develop) as well as the behavioral processes that maintain a

team working effectively (what teams do to work). In this context, the progressive phases mark group interaction course of development, whereas the behavioural elements give the indicative factors of the quality of teamwork operations. We anticipate that leadership, monitoring/backup and adaptability co-exist with orientation (Performing) in reinforcing manner which depict the nature of interaction between structure and interpersonal processes to assist team effectiveness in Malaysian higher education institutions.
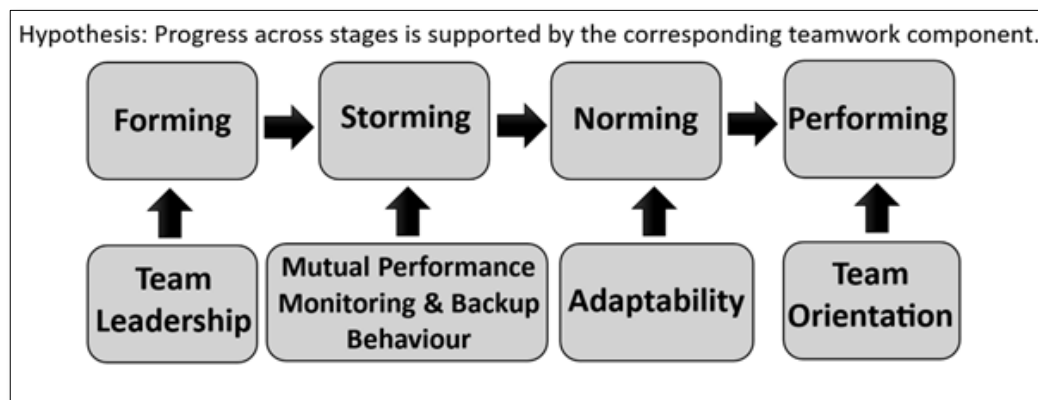

Figure 1 - Conceptual framework integrating Tuckman's stages with Salas et al.'s teamwork components

Note: Progress across stages is supported by the corresponding teamwork component (e.g., Forming ↔ Leadership; Storming ↔ Monitoring/Backup; Norming ↔ Adaptability; Performing ↔ Orientation).

METHODOLOGY

Design and Participants

A cross-sectional quantitative survey study was carried out among 209 undergraduates (Years 1-3) pursuing language related courses in a state university in Malaysia. Participation was voluntary and anonymous. Gender and the year of study were coded as 1 -2 and 1 -3, respectively.

Measures

Four subscales correlated with Tuckman-Salas integration were measured using a 29- item Likert scale (1 = strongly disagree, 5 = strongly agree): team leadership (Forming, 7 items), mutual performance monitoring and backup behavior (Storming, 6 items), adaptability (Norming, 8 items), and team orientation (Performing, 8 items). Internal consistency was satisfactory to excellent (α = .720, .756, .716, .886; overall α = .904).

Table 1 - Instrument sections, item counts, and Cronbach's α.

Section	Components	Stage	Items	
B	Team Leadership	Forming	7	.720
C	Mutual Performance Monitoring & Backup Behaviour	Storming	6	.756
D	Adaptability	Norming	8	.716
E	Team Orientation	Performing	8	.886
			29	.904

Procedure and Analysis

The instrument was also subjected to expert evaluation of the content to prove content validity and linguistic adequacy. To answer RQ5 and test the relationships between the components of teamwork, data were processed with the help of descriptive statistics and Pearson correlations. The inferential analyses were also conducted to

enhance the strength of findings. In particular, a multiple regression model was calculated to describe Performing based on Forming, Storming and Norming, with the control of gender and the year of study. This method enabled more insight into the proportionality of each phase to the results of teamwork. The significance was fixed at α = .05 (two-tailed).

RESULTS

Demographics

Females constituted 68% and males 32% of respondents (N = 209). Year distribution: Year 1 (16%), Year 2 (32%), Year 3 (52%). This profile suggests perceptions reflect teams with relatively mature exposure to group work.

Table 2 - Gender distribution.

No	Item	Percentage
1	Male	32%
2	Female	68%

Table 3 - Year of study distribution (percentage).

No	Item	Percentage
1	Year 1	16%
2	Year 2	32%
3	Year 3	52%

RQ1 — Team Leadership (Forming)

According to descriptive means (Table 4), students appreciate the clarity of goals and role allocation at an early stage of the teamwork (M ≈ 4.142). However, the lack of mutual trust in the initial stages is also a problem (M ≈ 3.0 -3.5), which is in line with the development of the dynamics of high uncertainty.

Table 4- Mean for team leadership (Forming).

Item	Mean
1. At the start, we try to have set procedures or protocols to ensure that things are orderly and run	4.1
2. At the start, we assign specific roles to team members	4.1
3. At the start, we are trying to define the goal and what tasks need to be accomplished.	4.2
4. At the start, team members are afraid or do not like to ask others for help.	3.5
5. 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.
6. At the start, it seems as if little is being accomplished with the project's goals.	4

| 7. 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 |

These results correlate with findings by Tuckman (1965) and subsequent data that indicate that initial clarity and cohesion are essential (Awang, 2023; Jones, 2019). They also share the same ideas with Salas et al. (2005) and Espevik et al. (2021): ambiguity should be minimized through visible leadership and coordination mechanisms, which will contribute to the seeding of trust, and in the Malaysian collectivist context, open critique must be suppressed at the beginning.

RQ2 — Mutual Performance Monitoring & Backup Behavior (Storming)

Learners are pleased with the leaders who maintain order and focus ($M \approx 3.9$) but complain about the tendencies to plunge into the work with little planning and experience some resistance and view some goals as unrealistic ($M \approx 3.2\text{-}3.6$).

Table 5- Mean for mutual performance monitoring & backup behaviour (Storming)

Item	Mean
1. 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
2. During discussions, the team leader tries to keep order and contributes to the task at hand.	3.9
3. During discussions, the tasks are very different from what we imagined and seem very difficult to accomplish.	3.5
4. During discussions, we argue a lot even though we agree on the real issues.	3.3
5. During discussions, the goals we have established seem unrealistic.	3.2
6. During discussions, there is a lot of resisting of the tasks on hand and quality improvement approaches.	3.6

This can be seen as storming tensions (Tuckman, 1965) and can be compared to Velarde-García et al. (2023) and Sonita and Febria (2022) on confusion/resistance in the case of structure being thin. In line with Somech et al. (2008) and Manser (2009), conflict control and supervision are critical to success, whereas Min (2023) and Yean (2024) observe that properly managed conflict can enhance innovation.

RQ3 — Adaptability (Norming)

Students support inclusively, common objectives and orderly planning ($M \approx 4.0\text{–}4.2$) but feel less at ease when it comes to constructive criticism or revealing personal problems ($M \approx 3.5$).

Table 6- Mean for adaptability in group (Norming)

Item	Mean
1. In the group, we have thorough procedures for agreeing on our objectives and planning the way we will perform our tasks.	4
2. In the group, we take our team's goals and objectives literally, and assume a shared understanding.	4.1
3. 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
4. In the group, we have accepted each other as members of the team.	4.2

5. In the group, we try to achieve harmony by avoiding conflict.	4.2
6. In the group, the team is often tempted to go above the original scope of the project.	3.8
7. In the group, we express criticism of others constructively	3.5
8. In the group, we often share personal problems with each other.	3.5

Findings are consistent with norming when the cohesion and common norms are established (Seck et al., 2013; Othman, 2023; Coers et al., 2010). This unwillingness to speak out criticism is reminiscent of Cossio-Torres et al. (2022) on psychological safety and collective-oriented cultural factors that are about maintaining harmony, particularly during the middle stages of teamwork.

RQ4 — Team Orientation (Performing)

Students identify productive teamwork, shared responsibility, enjoyment, problem solving, and acceptance of strengths/weaknesses (M ≈ 4.1–4.3), but recognize procedural fluidity (M ≈ 3.7).

Table 7- Means for Team Orientation (Performing)

Item	Mean
1. 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
2. In the end, we do not have fixed procedures, we make them up as the task or project progresses.	3.7
3. In the end, we enjoy working together; we have a fun and productive time.	4.2
4. In the end, the team leader is democratic and collaborative.	4.1
5. In the end, we fully accept each other's strengths and weakness.	4.2
6. In the end, we are able to work through group problems.	4.2
7. In the end, there is a close attachment to the team.	4
8. In the end, we get a lot of work done.	4.3

These findings are in line with the performing stage (Tuckman and Jensen, 1977), and with Nor (2023) and Min (2023): the more effective teams are at passing the previous stage, the more effective they become at the subsequent one. Collaboration also allows them to overlap with more general literature on deeper learning and long-term competency (Boud and Falchikov, 2006; Gresch and Martens, 2019; King and Henderson, 2018).

RQ5 — Relationships Among Components

Pearson correlation analyses reveal that the four teamwork components have a significant positive correlation (see Table 8): leadership–monitoring/ backup ($r \approx .58$), monitoring/ backup–adaptability ($r \approx .44$), adaptability–orientation ($r \approx .67$), and leadership–orientation ($r \approx .58$), all $p < .001$.

Table 8 - Correlations among teamwork components.

Component	Leadership	Monitoring/Backup	Adaptability	Orientation
Leadership	1.00	.58**	—	.58**
Monitoring/Backup		1.00	.44**	—
Adaptability			1.00	.67**
Orientation				1.00

Note: Pearson's r correlations, **p < .001 for all associations. Leadership = Forming; onitoring/Backup = Storming; Adaptability = Norming; Orientation = Performing.

These comparable and moderate-high strengths show that the constructs of teamwork, leadership, monitoring/backup behavior, adaptability, and orientation, are not independent skills but work in an interdependent way. This will help Salas et al. (2005) who identified a concept called effective teamwork as a system of mutually reinforcing behavioral processes. Specifically, the connection between adaptability and orientation is high (r ≈ .67), which means that flexible teams are also those that deliver higher collective performance, which is also reflected in the work by Svensson et al. (2019) and Espevik et al. (2021), who found the same dynamics in high-reliability teams.

The connections between leadership and monitoring/back up (r ≈.58) also emphasize the fact that the shared monitoring relies on effective communication of the leader and the responsibility distribution, as well as Manser (2009) and Lemieux-Charles and McGuire (2006) concluded that coordination regimes are necessary in order to preserve situational awareness. At the same time, the fact that leadership is positively correlated with orientation supports the notion that the positive leadership tone determines the performing and resonance level of efficiency through trust and psychological safety as collaboration intermediates, as Cossio-Torres et al. (2022) and Poort et al. (2020) have found out.

In general, these interrelationships are empirical evidence that team effectiveness is created in a constellation of mutually supportive behaviors. The combined TuckmanSalas model therefore incorporates the behavioral as well as the developmental aspects of a team and illustrates its relevance towards Malaysian undergraduates working within collectivist learning contexts in which harmony, trust, and adaptive communication are important in ensuring the continued performance of a group.

Robustness Check: Multiple Regression

To further explore the relations between the components of teamwork a multiple regression analysis was performed to predict the Performing as a result of Forming, Storming and Norming and have control over the year of study and gender. The integrated framework has a high level of explanatory power, as the model explained a significant amount of variance in performing (adjusted $R^2 ≈ .51$, $p < .001$),

Table 9 indicates that Norming and Forming were both major predictors of Performing overall with a positive significance, implying that structure and coherent norms are the key factors of team effectiveness. Conversely, Storming had a weak but significant negative correlation, which suggests that unmanaged conflict or resistance can slow down performance. There were only marginal effects of both control variables, year and gender as observed in the results of group comparison as indicated in Section 4.8.

These results are consistent with the previous correlation studies and support the existing body of literature that highlights the role of trust, clarity, and controlled conflict in collaborative learning settings (Poort et al., 2020; Laaziz et al., 2023; Min, 2023). The predictive pattern also confirms the combination of the developmental stages of Tuckman with the teamwork elements of Salas as a sensible framework of teamwork behaviour among students.

Table 9 - Multiple regression predicting team orientation (Performing) from Forming, Storming, and Norming (controls: gender, year).

Predictor	Std. Beta	p	95% CI Low	95% CI High
(Constant)	0.00	1.000	−0.095	0.095
Forming	0.352	< .001	0.218	0.484
Storming	−0.127	.035	−0.246	−0.009
Norming	0.520	< .001	0.399	0.641

Year	−0.105	.033	−0.199	−0.009
Gender	0.083	.089	−0.013	0.178

Note: Dependent variable: Team Orientation (Performing). R^2 = .51 (Adjusted R^2 = .51). Positive β values for Forming and Norming indicate stronger contribution to Performing; Storming shows a small negative effect.

Group Differences by Gender and Year of Study

Independent-samples *t*-tests and one-way ANOVAs were carried out to investigate whether there was a difference in perceptions of the components of teamwork between genders or year of study. The analyses, as demonstrated in Tables 10 and 11, did not show statistically significant differences between the genders or study level ($p > .05$ for all components), which implies that male and female students, or the first-, second-, and third-year cohort, rated the quality of teamwork in mostly similar ways.

Though, mean scores of females were slightly higher than the corresponding scores of males in all four dimensions (Forming, Storming, Norming, and Performing) the differences did not prove to be significant, indicating that teamwork perceptions are not highly influenced by gendered communication or leadership norms within the given sample. The given finding is consistent with the recent evidence of the Asian tertiary contexts (e.g., Linca, 2023; Othman, 2023) that indicates gender parity in collaborative learning attitudes after students have sufficient exposure to structured group work.

In a similar manner, the ANOVA results on the years of study, experience level per se did not have a significant difference on the perceptions of teamwork though the mean scores of students in Year 3 were slightly higher on Performing and Norming. This can be the manifestation of the common culture of learning and the exposure to group work on the same level, which yields a relatively uniform concept of successful teamwork. The fact that there are no significant cohort variations also indicates that the Tuckman group development processes are undergone during the entire life of academic progression which supports the stability of the integrated model across the maturity levels.

The combination of these findings suggests that perceived teamwork competence is most affected by group process variables (e.g., clarity, trust, adaptability) compared to such demographic variables as gender or academic year.

Table 10 - Independent-samples *t*-tests by gender for each component.

Component	Male (M)	Female(M)	*t* (207)	*p*	Cohen's *d*
Leadership (Forming)	3.98	4.04	0.66	.51	0.08
Monitoring/ Backup (Storming)	3.72	3.75	0.41	.68	0.05
Adaptability (Norming)	3.95	3.99	0.58	.56	0.07
Team Orientation (Performing)	4.10	4.15	0.72	.47	0.09

Note: No significant gender differences were found across teamwork components (p > .05).

Table 11 - One-way ANOVAs by year of study for each component.

Component	*F* (2, 206)	*p*	Partial η²	Post Hoc (Tukey)
Leadership (Forming)	1.82	.165	.018	n.s.
Monitoring/ Backup (Storming)	0.93	.395	.009	n.s.

Adaptability (Norming)	1.56	.213	.015	n.s.
Team Orientation (Performing)	0.78	.460	.008	n.s.

Note: No significant year-of-study differences were observed across teamwork components (p > .05), indicating consistent teamwork perceptions among Year 1–3 students.

DISCUSSION

Synthesis with the Literature

In general, the students appreciate structure (Forming) and cohesion (Norming), and correlate Performing with productivity and shared responsibility - the results agree with the sequence in Tuckman and with Boud and Falchikov (2006) and King and Henderson (2018) about collaborative learning benefits. Salas et al. (2005): leadership, monitoring/ backup, adaptability and orientation There exists a positive interrelationship between components, which confirms that these factors do not work independently but in synergy.

In which Storming poses difficulties (goal realism, resistance), our data fall in line with those of Velarde-Garcia et al. (2023) and Sonita and Febria (2022) that report delays and discomfort in the absence of adequate scaffolding. However, according to Min (2023) and Yean (2024), it can be the developmental and even innovative storming, provided that the norms of feedback and psychological safety are established (Cossio-Torres et al., 2022).

Pedagogical Implications (Narrative)

These results highlight the pedagogical need to plan group work, rather than to delegate it. In the Malaysian collectivist classrooms, the instructors can maintain harmony and enable voice by designing a clear early structure and safe conversation. We suggest courses include a team charter during Forming that clarifies roles, deliverables and communication norms; have feedback procedures (e.g., evidence-first critique language, rotating "devil's advocate") during Norming to normalize constructive criticism and have check-ins in order to contain storming so that it drives improvement and not resentment. The influx of peer evaluation can be calibrated to eliminate free-riding (Hall and Buzwell, 2013; Benning, 2024; Narmaditya et al., 2022), and micro-workshops focused on conflict navigation and trust-building can be incorporated to enhance adaptability and orientation. Such instructional actions are aligned with Salas et al. (2005) about leadership, monitoring, and backup behavior, with evidence that trust and psychological safety are the motivator of engagement and deep learning (Poort et al., 2020; Laaziz et al., 2023).

Limitations and Future Research

The self-report, cross-sectional design cannot be causally inferred in future; longitudinal studies, objective metrics of performance and mixed methods (e.g., observation, learning analytics) should be used in the future. Boundary conditions would be better explained through comparative studies across disciplines (STEM vs. humanities) and cultural settings. The analysis of technology platforms (e.g., peer evaluation with analytics, AI-assisted collaboration) can also shed some light on those mechanisms that can decrease free-riding and ensure psychological safety (Otto et al., 2024). Lastly, the research should be applied in the future to test precipitant interventions (e.g. safety-oriented feedback training) in order to assess which competencies (adaptability, monitoring) best enhance the performance in collectivist classrooms.

CONCLUSION

A combination of the stages and teamwork elements introduced by Tuckman and Salas sheds some light on the role of structure, norms, and controlled conflict in the formation of teamwork among Malaysian undergraduates. The perception of the students implies that they highly appreciate the importance of establishing clear goals, shared responsibility, and cohesion, but it also expresses weaknesses in the domain of trust and the willingness to receive criticism at a younger age.

Interrelationships between components are positive which proves that teamwork performance is a behavior that is based on interdependence as opposed to solitary skills. To teachers, the challenge lies in crafting collaboration using clear charters, feedback procedures, and peer assessments to ensure that harmony and open yet task-oriented communication exist. When successfully applied, such pedagogical designs will be able to shift group work to a high-leverage learning experience that equips graduates with the preparation to work in group professional settings.

Besides, in the Malaysian collectivist learning environment, one must foster trust and positive conflict to maintain the culture of effective teamwork. Future research can also apply this model to other disciplines or can impose longitudinal designs on the changes in team dynamics over time, which will further clarify the importance of structured collaboration in improving study outcomes in higher education.

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