education sciences

MDPI

Article

Bridging the Silence: Understanding Motivations and Participation Barriers in Transnational Engineering Education

Kamalanathan Kajan [1,*], Nasir Abbasi [1] and Costas Loizou [2]

[1] School of Electronic and Electrical Engineering, University of Leeds, Leeds LS2 9JT, UK
[2] School of Mathematics, University of Leeds, Leeds LS2 9JT, UK
* Correspondence: k.kajan@leeds.ac.uk

Abstract

Active learning promises richer engagement, yet transnational English-medium engineering classrooms can remain quiet even when students are motivated. This study aims to explain this silence by examining the factors that encourage students to participate, the barriers that discourage them, and how student characteristics and coping strategies influence their participation. We conducted a mixed-methods survey of 402 undergraduates (Years 2–4) in a China–United Kingdom (Sino-UK) joint engineering programme in China. We analysed the closed-ended responses using descriptive and inferential statistics (including effect sizes) and the open-ended responses using inductive thematic analysis. Quantitative results showed that interest in the subject (76.6%) and career relevance (72.8%) were the most potent motivators. In contrast, fear of making mistakes (56%) and low confidence in public speaking (51%) were the most common barriers to participation. Other constraints included language load, deference to instructors, and prior passive learning experiences. Gender and discipline differences were negligible (Cramér's $V \leq 0.09$; Cohen's $d < 0.20$). A small year-of-study effect also emerged, with later-year students marginally more confident in English-medium interactions. Qualitative analysis revealed recurring themes of evaluation anxiety, demands for technical vocabulary, inconsistent participation expectations, and reliance on private coping strategies (e.g., pre-class preparation, peer support, and after-class queries). We propose a 'motivated-but-silent' learner profile and blocked-pathway model where cultural, linguistic, and psychological filters prevent motivation from becoming classroom voice, refining Self-Determination Theory/Expectancy–Value Theory (SDT/EVT) and Willingness to Communicate (WTC) theories for transnational engineering contexts. These findings inform practice by recommending psychological safety measures, discipline-specific language scaffolds, and culturally responsive pedagogy to unlock student voice in English-medium Instruction/Transnational Education (EMI/TNE) settings.

Keywords: transnational engineering education; English-medium instruction; active learning; classroom silence; willingness to communicate; psychological safety; Chinese–foreign (Sino-foreign) joint programmes

check for updates

Academic Editor: Sharifu Ura

Received: 21 July 2025
Revised: 29 August 2025
Accepted: 2 September 2025
Published: 9 September 2025

Citation: Kajan, K., Abbasi, N., & Loizou, C. (2025). Bridging the Silence: Understanding Motivations and Participation Barriers in Transnational Engineering Education. *Education Sciences*, *15*(9), 1185. https://doi.org/10.3390/educsci15091185

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1. Introduction

Active learning—students analysing, discussing, and solving problems rather than listening passively—improves achievement and can narrow attainment gaps in undergraduate Science, Technology, Engineering, and Mathematics (STEM) subjects when well

designed (Driessen et al., 2020; Theobald et al., 2020). At the same time, particular implementations may heighten evaluation anxiety and exclude quieter learners if psychological safety and scaffolding are weak (Araghi et al., 2023; Downing et al., 2020). These design sensitivities are especially salient in transnational English-medium engineering programmes (EMI/TNE), where participation occurs through a second language and across differing classroom norms.

In EMI/TNE contexts, students routinely face a heavy linguistic load (e.g., dense technical vocabulary and rapid speech) and must interpret unfamiliar participation norms introduced by visiting or internationally trained staff (Curle et al., 2024; Galloway & Rose, 2021; Liao et al., 2025). Corpus-based and classroom studies demonstrate that vocabulary and discourse demands limit comprehension and, by extension, the willingness to speak (Reynolds et al., 2023), while lecturer explicitness strategies (e.g., signposting, paraphrasing, and pacing) can mitigate these constraints (Yu & Kaur, 2024). Beyond language, culturally embedded deference to instructors, and the legacy of lecture-centred schooling may make public contributions feel risky, even for academically committed students.

To address these challenges, we anchor four key constructs that guide the present study. First, active learning refers to pedagogies that elicit generative cognitive work through interaction, problem-solving, and feedback (Driessen et al., 2020). Second, EMI/TNE refers to the delivery of disciplinary content in English within cross-border partnerships, often involving a blend of local and visiting staff (Curle et al., 2024; Liao et al., 2025). Third, classroom silence is viewed as a participation choice shaped by cultural, linguistic, and psychological factors, rather than a proxy for disengagement. Fourth, the Willingness to Communicate (WTC) theory posits that affect, self-efficacy, and context influence speech acts in a second language (MacIntyre et al., 1998). Recent evidence highlights the roles of enjoyment, confidence, and teacher support as mediators of WTC, alongside anxiety (Derakhshan & Fathi, 2024; Q. Zhang et al., 2024; Wang et al., 2024). In parallel, the psychological safety literature explains how norms that reduce interpersonal risk facilitate contributions in teams and classes (Edmondson, 2018; Huerta et al., 2024).

Despite the rich literature on each strand, three gaps remain. Most empirical work on participation under active learning is situated in Anglophone or multilingual Western classrooms; fewer large-N studies examine STEM participation in EMI/TNE engineering programmes in China and similar settings (Curle et al., 2024; Liao et al., 2025). Existing accounts rarely integrate motivational theories (e.g., SDT/EVT) with WTC and psychological safety perspectives to explain why high motivation sometimes fails to translate into public voice under EMI. Practical guidance often lists techniques (e.g., think–pair–share and anonymous polling) without linking them to the underlying mechanisms—such as language load, evaluation anxiety, or safety—that determine who speaks (Guenther & Abbott, 2024; Yep et al., 2023).

This study addresses these gaps in a Sino-UK joint engineering programme in China, using a cross-sectional mixed-methods survey of 402 undergraduates (Years 2–4) to explain how students' motivations, barriers, and coping strategies shape their participation in English-medium classes. The setting is typical of TNE engineering—a mix of local and visiting staff, compressed teaching blocks, and diverse participation expectations.

Conceptually, we propose a blocked-pathway model; strong motivation (intrinsic interest and career relevance) must pass through filters—language demands, culturally patterned deference, and evaluation anxiety—before becoming visible in participation. When these filters are tight, students become "motivated-but-silent", meaning that they are cognitively engaged yet verbally reticent. This framing synthesises insights from three theoretical perspectives. Self-Determination/Expectancy-Value theories emphasise value and expectancy; the Willingness to Communicate framework highlights affect and

communicative confidence; and psychological safety addresses perceived interpersonal risk. Together, these perspectives offer an integrated lens for understanding participation in EMI/TNE classrooms (MacIntyre et al., 1998).

Guided by this framing, we ask the following research questions (RQs):

i. RQ1: What factors motivate students in a transnational engineering programme to participate in class?
ii. RQ2: What barriers deter participation, and how do language, confidence, and cultural norms figure into these barriers?
iii. RQ3: How do student characteristics and coping strategies (e.g., preparation and private inquiries) relate to participation?

By addressing these questions, this study makes the following three important contributions:

i. We refine theory by specifying when and why motivation fails to become voice in EMI/TNE engineering.
ii. We offer large-sample, mixed-methods evidence from a Sino-UK context.
iii. We map actionable levers—psychological safety, discipline-specific language scaffolds, and explicit participation norms—to the mechanisms identified, with implications for curriculum design from the foundation year onwards (Guenther & Abbott, 2024; Huerta et al., 2024; Yu & Kaur, 2024).

2. Literature Review

2.1. Active Learning in Engineering: Effectiveness, Design Sensitivities, and Student Effects

Active learning is widely shown to improve student learning outcomes and can even help narrow attainment gaps in undergraduate STEM fields, including engineering. However, the way active learning is implemented significantly influences student well-being and inclusion; supportive structures can alleviate student anxiety and low mood, whereas poorly designed activities may exacerbate stress and undermine confidence. Research demonstrates that incorporating inclusive strategies, such as "writing-to-learn" tasks, can enhance performance in active courses. Likewise, developing instructors' skills in inclusive teaching—now measurable with new evaluation instruments—helps ensure that active learning environments remain welcoming (Johnson-Ojeda et al., 2025). Even with these efforts, participation in active classrooms can be uneven; for example, gender-based differences have been documented in some contexts (Aguillon et al., 2020). This underscores the need to consider contextual moderators, such as language, culture, and perceived risk, that shape who speaks up and when.

2.2. Psychological Safety, Equitable Participation, and Low-Risk Talk Moves

Psychological safety—a classroom climate of trust in which students feel that speaking up will not incur interpersonal costs—strongly influences whether they contribute to class. In engineering courses and team projects, higher psychological safety is associated with healthier group dynamics and increased student contributions. Similarly, studies across higher education find that cultivating safety-enhancing norms yields more equitable participation (Duncan et al., 2023; McClintock et al., 2023; Wei & Han, 2025). To translate safety into actual student voice, instructors can implement low-risk participation routines that give students safer ways to engage. For example, think–pair–share activities distribute talk and deepen reasoning, and using partially anonymous response tools can reduce evaluation anxiety for quieter students. Such strategies demonstrate that building psychological safety is a crucial complement to active learning pedagogies.

2.3. Participation Under English-Medium Instruction (EMI) and Transnational Education (TNE)

EMI and TNE engineering programmes pose unique participation challenges because instruction is delivered in a second language, and classroom norms often differ across cultures. Large-scale reviews document the rapid expansion of EMI in higher education alongside persistent issues such as students' uneven English preparedness and heavy linguistic load, which can hinder comprehension and engagement. For instance, policies of "Englishisation" may raise classroom expectations but often do so without providing adequate language or academic support to students (Galloway & Rose, 2021; Galloway & Ruegg, 2020). At the interactional level, a high density of technical vocabulary and fast-paced delivery can constrain students' comprehension and willingness to speak (Reynolds et al., 2023); on the other hand, lecturers' explicit signposting, paraphrasing, and pacing significantly aid understanding (Yu & Kaur, 2024), even though limited academic language proficiency often remains a common pinch point (M. Li & Pei, 2024).

Beyond language, the structural features of TNE programmes can also affect participation. Factors such as blended local/visiting teaching staff, compressed teaching blocks, and mixed expectations around classroom interaction all shape how actively students engage (Kearney et al., 2024; Lai & Jung, 2025). In online or technology-rich courses, which are increasingly common in international programmes, strong support structures, a sense of community, and careful task design are critical to sustaining engagement for diverse student cohorts. Meanwhile, researchers caution that many EMI studies lack robust outcome measures, calling for more precise definitions and more substantial evidence of validity in how "engagement" is assessed (Wingrove et al., 2025). Overall, this literature suggests that heavy language demands and ambiguous participation norms in EMI/TNE environments can suppress students' public participation. Even highly motivated learners may remain silent if they face significant linguistic or cultural barriers, reinforcing the importance of accounting for affective constraints (e.g., anxiety) on student voice in these settings.

2.4. Willingness to Communicate (WTC), Motivation, and Affective Filters

The WTC framework conceptualises speech as a probabilistic act shaped by context, affect, and self-beliefs (MacIntyre et al., 1998). In EMI/TNE contexts, enjoyment, confidence, and teacher support consistently promote WTC, whereas anxiety hinders it (Derakhshan & Fathi, 2024; C. Li et al., 2023; Q. Zhang et al., 2024) Recent modelling shows that positive emotions often mediate links from confidence or trait factors to WTC (Q. Zhang et al., 2024) and that strong teacher support can bolster WTC by reducing anxiety (Chen et al., 2024) As established previously, intrinsic interest and task value energise engagement (Deci & Ryan, 2000); however, even highly motivated students may remain silent if anxiety is high. Meta-analytic and longitudinal evidence confirm that affective constraints can suppress performance and participation, even in the presence of strong motivation (Liu et al., 2025; Tang & He, 2023). In other words, motivation may be necessary but not sufficient when linguistic, cultural, and evaluative risks persist, supporting our expectation of a "filter" effect that can block the translation of motivation into speaking up.

2.5. Technology-Mediated Laboratories and the Post-Coronavirus Disease (COVID) Landscape in Engineering

The Coronavirus Disease 2019 (COVID-19) pandemic triggered a rapid shift from lecture-centric teaching to technology-enhanced, practice-oriented instruction in engineering education. Virtual and remote laboratories, along with simulation platforms, were widely adopted to sustain hands-on learning experiences during this period. Evidence suggests that these online lab formats can be practical if carefully scaffolded; a meta-analysis found that virtual labs can achieve comparable learning outcomes when proper support is

in place (M. Li & Pei, 2024), and gamified active-learning approaches have shown promise in boosting student motivation and participation (Duran et al., 2025). These technology-mediated formats create additional opportunities for students to practice in low-stakes settings and rehearse contributions (potentially easing language anxiety) before face-to-face classes. However, they also carry the risk of widening participation gaps if robust language scaffolds and explicit participation norms are not in place.

2.6. Culturally Responsive, Inclusive Pedagogy for EMI/TNE Engineering

Culturally responsive teaching practices and inclusive course design can significantly influence who benefits from active learning in diverse engineering classrooms. Targeted initiatives at the faculty and programme level—such as professional development workshops, reflective teaching practices, and explicit equity goals—have been shown to improve the classroom climate for student participation (Pevec-Zimmer et al., 2024). For international students specifically, learning environments that foster community and provide clear structure (including well-designed online components) help sustain engagement and reduce uncertainty around participation (Chen et al., 2024; Kearney et al., 2024). In EMI/TNE contexts, these inclusive strategies intersect with the earlier language-policy concerns of "Englishisation" (Galloway & Rose, 2021; Galloway & Ruegg, 2020), underscoring the importance of dual supports; robust academic language scaffolding plus structured, low-risk opportunities for students to speak up.

2.7. Synthesis and Research Gap

Building on our blocked-pathway framework, the literature reveals how contextual factors interact to suppress participation despite high motivation. WTC studies demonstrate that positive affect (enjoyment and confidence) and supportive instructors increase students' willingness to speak, whereas anxiety inhibits it. Similarly, engineering education research confirms that active-learning structures can inadvertently heighten anxiety and discourage contributions if psychological safety and scaffolding are insufficient. Meanwhile, EMI studies highlight how heavy technical vocabulary loads and unfamiliar participation norms compound these barriers in transnational classrooms, further limiting students' willingness to contribute. Together, these insights reinforce the gaps identified earlier in our review. Most empirical work on classroom participation has been conducted in Western, first-language settings, whereas large-scale studies in EMI/TNE engineering programmes remain scarce. Moreover, scholars have called for stronger measurement validity and clearer constructs when examining language-supported engagement outcomes in EMI contexts. The present mixed-methods study directly responds to these needs by focusing on a Sino-UK engineering programme and empirically modelling how motivation-to-participation pathways may be blocked in transnational classrooms. In doing so, we address the contextual and methodological gaps by integrating student perspectives (via qualitative themes) with quantitative patterns to explain why even "motivated-but-silent" learners may fail to voice their ideas in class.

3. Materials and Methods

3.1. Study Design and Rationale

This study adopts a cross-sectional, concurrent mixed-methods survey design to explain why motivated students may remain verbally reticent in transnational English-medium engineering classrooms. Quantitative items captured the prevalence and associations among motivations, barriers, and behaviours; open-ended prompts provided contextualised accounts of students' experiences. A convergent (triangulation) logic guided integration; quantitative and qualitative strands were collected in the same instrument

and time window, analysed separately, and then woven together for interpretation (see Section 3.8). Therefore, this article reports an empirical study rather than a systematic review or meta-analysis. It directly addresses prior calls to state the study type precisely and to ensure methodological transparency.

3.2. Setting, Eligibility, and Sampling

Setting: The research took place at a Sino-UK joint engineering programme in China, which has been operating since 2016 and enrols ~1200 students over four years, with mixed local/visiting staff and English as the medium of instruction.

Eligibility. The inclusion criteria were (i) enrolment in the programme, (ii) Year 2–Year 4 status (Year 2 aligns with UK Level 1, essentially following a foundation year (Year 1)), and (iii) consent to participate. The exclusion criteria were (i) Year 1 students (limited exposure to EMI and active participation norms), and (ii) withdrawal from the survey before consent.

Sampling and recruitment. A programme-wide invitation was distributed via institutional email and the learning platform. Participation was voluntary and uncompensated. A total of n = 402 valid responses were recorded. Because we could not verify the total number of eligible recipients when the invitations were sent, we could not calculate a precise response rate. We therefore discuss sample representativeness as a limitation.

3.3. Instruments

An online questionnaire Microsoft Forms (Microsoft Corp., Redmond, WA, USA) was designed based on prior work on motivation, language anxiety, willingness to communicate, and participation in EMI/TNE contexts, and this was pilot-tested with 12 students to ensure clarity. The questionnaire was subsequently revised with a focus on simplifying wording and reordering options. The final instrument comprised about 20 items across the following five sections:

i. Demographics (year, discipline, gender, and age);
ii. Motivations (multi-select list, e.g., interest, career relevance, grades, teaching style, and interactive activities);
iii. Barriers to participation (multi-select, e.g., fear of mistakes, low confidence, language/terms, prior passive learning, and unclear expectations);
iv. Language and communication (Likert-type items on comfort speaking/asking questions, vocabulary difficulty, and out-of-class English use);
v. Preparation and peer interaction (habits before/after class and peer discussion), plus an open-ended prompt for comments/suggestions.

The internal consistency for relevant clusters was acceptable (Cronbach's α = 0.76 for confidence; α = 0.71 for language-anxiety indicators). Item texts and response options matched the constructs analysed in the Results (Section 4).

3.4. Procedure and Data Protection

The survey remained open for two weeks. A unique link (single submission per authenticated login) reduced duplication; names/IDs were not stored with responses. The survey language was English (programme medium). A closing item inquired about the ease of comprehension in flagging language-driven completion issues. Raw data were exported to Microsoft Excel (Microsoft Corp., Redmond, WA, USA) for cleaning and analysed in IBM SPSS Statistics v26 (IBM Corp., Armonk, NY, USA), and de-identified files are stored on password-protected systems according to faculty policy.

3.5. Data Preparation and Handling Missing Data

The data were screened for impossible values and duplicates (none retained after login control). Item-level nonresponses were handled via pairwise deletion; the per-analysis n is reported in tables/figures where applicable. No imputation was performed. For scale items, we inspected the distributions and assumptions (approximate normality and homogeneity) using descriptive diagnostics (skewness and kurtosis) as well as plots before conducting parametric testing. Where Chi-square expected counts fell below five, exact tests were considered; otherwise, standard approximations were used.

3.6. Quantitative Analysis

Analyses were conducted in IBM SPSS v26 (IBM Corp., Armonk, NY, USA) and Microsoft Excel (Microsoft Corp., Redmond, WA, USA) as follows:

i. Descriptives: frequencies, percentages, means, and standard deviations for motivations, barriers, and behaviours.
ii. Group comparisons: Chi-square tests (e.g., gender × barrier) with Cramér's V as effect size; independent-samples t-tests (e.g., comfort scores by gender/discipline) with Cohen's d and 95% confidence intervals (CIs).
iii. Associations: Pearson correlations among key Likert-type variables (comfort, language difficulty, and preparation habits), reporting r with 95% CIs (Fisher z method).

Unless otherwise stated, the tests were two-tailed with $\alpha = 0.05$. A correlation matrix was compiled to visualise construct clustering (e.g., language-anxiety indicators and confidence/comfort items). The choice of analyses reflects the measurement levels of the measurements, and the study's aims (i.e., pattern detection and explanatory synthesis rather than prediction).

3.7. Qualitative Analysis

Open-ended responses were analysed using inductive thematic analysis following the Braun and Clarke six-phase approach—familiarisation, initial coding, theme development, review, definition, and reporting. Two researchers independently coded the data, met to consolidate a shared codebook, and resolved discrepancies by consensus. A shared matrix in Excel tracked codes, exemplar quotations (anonymised), and theme memos. This enabled bottom-up theme development aligned with the quantitative constructs while allowing new patterns to surface (e.g., "private coping" and "low-risk participation" strategies). Inter-rater reliability was not calculated before consensus discussions. Coding consistency was addressed through independent initial coding by two researchers, followed by collaborative meetings to resolve discrepancies and refine the codebook.

3.8. Integration of Strands

Following a convergent design, we first interpreted quantitative and qualitative results separately and then integrated them through joint displays and narrative weaving keyed to the research questions (RQ1–RQ3). The integration priorities were (i) confirmation (agreement across strands), (ii) expansion (one strand adding scope), and (iii) explanation (qualitative accounts clarifying statistical patterns). This procedure yielded the study's blocked-pathway account of how motivation may be filtered by language, confidence, and culturally patterned deference before becoming public participation.

3.9. Ethical Considerations

Ethical approval was granted by the Faculty of Engineering and Physical Sciences Research Ethics Committee at the University of Leeds (Ref: 1677, 13 July 2024). Participation was voluntary and anonymous; informed consent was recorded at survey entry; students

could skip non-mandatory items or withdraw at any time. Identifiers were decoupled from response files during processing. The data are stored securely and will be retained for seven years, according to our policy.

4. Results

Data Overview: The whole dataset (n = 402) was examined for missing responses and outliers before addressing each research question. Item nonresponses were minimal; all 402 students provided demographic information (year, discipline, age, and gender), although 33 students (8%) chose "prefer not to say" for gender. For the survey items, all available data per question (pairwise inclusion) were used for the analyses. For example, five students (1.2%) skipped the motivation item, yielding n = 397 valid responses for that analysis. No survey item had more than 3% missing data, so no imputation was performed; percentages of the valid n for each analysis are reported (with those who skipped treated as missing for that item). In gender-based analyses, only students who identified as male or female (total n = 369) were included, excluding "prefer not to say" responses. We also checked for outliers, as reactions were confined to fixed-choice options and five-point Likert scales, making it impossible for out-of-range values to occur. We inspected quantitative variables (e.g., self-rated comfort levels) for extreme patterns and found no evidence of mischievous or aberrant responding. Therefore, no data points were excluded as outliers. All analyses were conducted on the full sample of 402 students, with the sample sizes for each item noted where applicable.

Table 1 presents the demographic characteristics of the 402 respondents, including year of study, engineering major, age group, and gender distribution, to contextualise the sample. The majority were second-year students (58%), and most were enrolled in Electronic/Electrical or Mechanical Engineering, with a smaller representation from other majors. The gender distribution (76% male, 16% female, and 8% not stated) reflects typical patterns in engineering programmes, thus limiting the statistical power of gender comparisons.

Table 1. Demographic characteristics of survey respondents (n = 402), illustrating the distribution by year of study, engineering discipline, age group, and gender. Note: The gender distribution reflects broader gender patterns in engineering programmes, which limits the statistical power of gender-based comparisons.

Characteristic	Category	Number (n)	Percentage (%)
Year of Study	Second year	233	58%
	Third year	105	26%
	Fourth year	64	16%
Engineering Discipline	Electronic and Electrical Engineering	153	38%
	Mechanical Engineering	96	24%
	Computer Science	80	20%
	Civil Engineering	60	15%
	Materials Science	13	3%
Age Group	18–21 years	362	90%
	Above 21 years	40	10%
Gender	Male	305	76%
	Female	64	16%
	Prefer not to say	33	8%

4.1. RQ1: Factors Motivating Student Participation

To explore what motivates students to participate in class, respondents selected up to four motivators for learning from a predefined list of options. Across the 397 students who answered this question (1588 total selections, averaging about 4 motivators per student), both intrinsic and extrinsic drivers featured prominently. As shown in Figure 1, the most frequently cited motivation was interest in the subject (76.6% of respondents, 95% CI [72.4%, 80.8%]). This was followed closely by the perceived career relevance of the course (72.8%, 95% CI [68.4%, 77.2%]) and the aim of achieving good grades/academic performance (65.2%, 95% CI [60.5%, 69.9%]). A clear majority of students selected these top three reasons, indicating that most are academically invested in their engineering studies, driven by genuine interest in the material and instrumental goals related to careers and achievement. About half of the students (50.6%) also cited an engaging teaching style as a motivator, and over one-third (38.8%) pointed to interactive class activities, such as group discussions and problem-solving exercises. These pedagogical factors suggest that how the material is taught can encourage students' willingness to engage. Several social-context motivators were less common but still notable, namely feedback on assessments (28.7% of students), opportunities for peer collaboration (26.7%), a sense of belonging in class (19.9%), and recognition from instructors or peers (18.6%). Thus, while interest in the subject and recognition of future benefits are the primary drivers of participation, classroom climate and interpersonal factors also influence the motivation of many students to contribute.

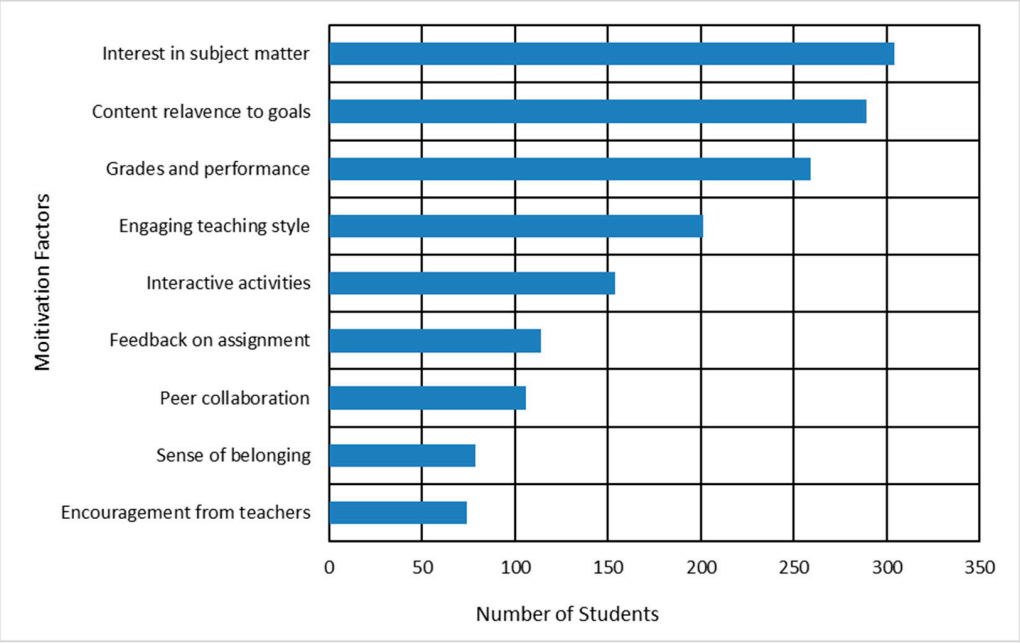

Figure 1. Top motivations for learning (multiple-response question).

Although most students endorsed the "big three" motivators (interest, career goals, and grades), a sizeable minority did not select one or more of these options. In fact, for each of those top motivators, roughly 23–27% of respondents did not choose that option. This suggests that the standard motivators may not be sufficient to drive a small but non-trivial segment of the class. For instance, a student who selected neither subject interest nor career relevance could represent a more disengaged profile, potentially lacking both intrinsic enthusiasm and clear extrinsic goals for studying engineering. Such students might be "chronic non-participators" whose classroom silence stems from apathy or alienation rather than from the anxiety or language barriers that affect many others. Identifying this sub-group is essential, as they could be at the highest risk of remaining passive or withdrawing

academically. Overall, the motivation data revealed a dual pattern; foundational drivers (interest in the field and the perceived future rewards of learning) are widespread in this cohort but situational factors like teaching quality, feedback, and peer interactions also play a role in students' day-to-day willingness to participate.

4.2. RQ2: Main Barriers Discouraging Student Participation

RQ2 focussed on the obstacles that discourage students from participating in class. All 402 students responded to a checklist of common participation barriers, selecting all factors that applied to them. This yielded over 1180 total selections (approximately 2.9 barriers per student on average), reflecting a wide range of challenges. Figure 2 presents an overview of the reported barriers, which we grouped into the following three thematic categories: (1) barriers related to active learning, (2) general communication or comprehension barriers, and (3) cultural or background factors. In the following sections, we detail the frequency of each category and its constituent items (the percentages are out of $n \approx 402$, because nearly all the students considered each barrier item).

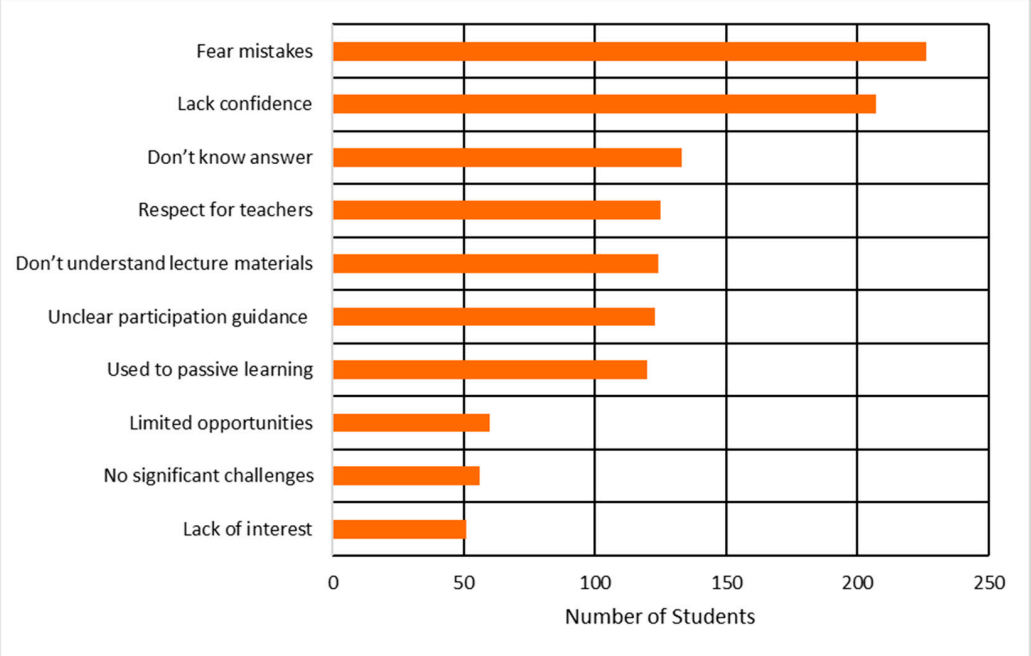

Figure 2. Common difficulties faced in class participation (multiple-response question).

4.2.1. Active Learning-Related Barriers

The most frequently cited impediments to participating were psychological barriers associated with active learning. Over half of the students reported a fear of making mistakes in front of others (56% of respondents, 95% CI [51.1%, 60.9%]) and a lack of confidence speaking publicly (51.0%, 95% CI [46.1%, 55.9%]) as reasons for staying quiet. These two forms of anxiety—essentially fear of negative evaluation and low self-confidence in a public setting—were by far the dominant concerns reported. Additionally, nearly one-third of students (about 30%) indicated that they were accustomed to a passive learning style from their prior education, which made active class participation feel unnatural to them. This carryover of lecture-based habits shows how previous educational experiences can shape current classroom behaviour. Notably, 14.9% of respondents felt that they "have few opportunities to participate" in class, suggesting that, in some cases, the course format or class environment (rather than the student's disposition) limited their participation. In other words, structural factors such as large class sizes, a fast-paced lecture format, or

insufficient time for discussion may be stifling engagement, even when a student might otherwise be willing to speak. In summary, many barriers in this category are affective (fear and low confidence) or experiential (habitual passivity) in nature, highlighting that students' anxiety and prior learning experiences can significantly impede their willingness to participate in active learning contexts.

4.2.2. General Communication Barriers

Another cluster of obstacles involved cognitive and communication difficulties that hinder students from contributing. Approximately one-third of students reported "not knowing the answer to the question" (33.1%) or "not understanding the question being asked" (30.8%) as reasons for staying silent. Similarly, unclear expectations for participation (i.e., not knowing when to speak up) were cited by 30.6% of students. These issues point to gaps in comprehension and orientation during class. Some students remain quiet because they struggle to follow the content or the instructor's questions in real time—potentially due to the fast pace of instruction or the use of unfamiliar technical terms in English—or because they are uncertain about how and when they are supposed to contribute. Thus, beyond personal confidence, there is an informational aspect to participation; a lack of understanding of the material (or the question posed) and ambiguity about class interaction norms can keep students silent. Improving students' real-time comprehension (through language support or more precise explanations) and making participation guidelines explicit could therefore remove some of these barriers. Overall, this category highlights that ensuring students understand the course content and the process for participating (e.g., the kind of responses that are expected and how to join discussions) is crucial to enabling more students to speak up.

4.2.3. Cultural and Background Factors

The third category of barriers reflects cultural norms and individual motivation. About 30% of students noted discomfort with "disagreeing with or challenging the instructor" in class. This aligns with traditional cultural norms (standard in Confucian-heritage educational contexts) of respecting authority and avoiding open conflict or challenge. In the context of a Sino-foreign joint programme, many students may have been socialised not to question teachers openly, leading to hesitation in more interactive classrooms led by international or visiting faculty. A smaller subset of students (12.7%) frankly admitted to having "low interest or motivation" to participate in class. While this is a minority, it is significant because it points to a fundamentally different issue—disengagement or apathy. Unlike the anxious-but-interested students held back by fear, these students lack the desire to engage at all, possibly because they find the class content irrelevant, uninteresting, or not valuable to their goals. On a more positive note, 13.9% of respondents reported no major barriers to their participation. This confident minority suggests that, despite the prevailing challenges, roughly one in seven students feels comfortable participating in class. Such students could serve as a peer resource or role models, as they might help set an example or encourage others to contribute.

It is worth noting that, in the survey's optional comment field for this question, many students reiterated the above concerns in their own words. Common themes from these write-in comments included personal shyness, fear of embarrassment, worry about pronunciation or speaking English, and a preference to listen quietly rather than speak. These qualitative remarks validate the categorised findings, emphasising that fear and language-related issues are the most prominent reasons for non-participation. Taken together, the barriers reported by students are primarily psychological (fear of mistakes and low confidence) and linguistic or comprehension-related (difficulty understanding or

expressing ideas in English), compounded by prior passive learning habits and cultural expectations about classroom behaviour. Thus, multiple overlapping factors contribute to students' reluctance to speak up in class, ranging from internal anxieties to external norms. Notably, a notable minority of students appear disengaged (lacking interest in participating), meaning that, for some individuals, silence may stem from low motivation rather than situational anxiety. Overall, RQ2 reveals that strong motivation alone (from RQ1) is often insufficient to guarantee participation when these deterrents are present; even highly motivated students can remain silent if they face significant fear, language barriers, or unclear norms.

4.3. RQ3: Influence of Student Characteristics and Coping Strategies on Participation

RQ3 examined how student characteristics (such as gender, discipline, and prior background) and students' coping strategies relate to their class participation. We addressed this through a combination of subgroup comparisons and analysis of self-reported behaviours. First, we examined whether participation motivators or barriers varied across demographic groups (gender and engineering major). We then explored how students cope with the challenges identified in RQ2 through various strategies (e.g., preparation, private inquiries, and language use). For all the subgroup analyses, the relevant subsample sizes are noted. The gender comparisons include the 369 students who reported their gender as male or female (76% male and 16% female, excluding the 8% who chose not to state gender), and the discipline comparisons include all 402 students across the five engineering majors (see Table 1 for the distribution of students by major). All the statistical tests used a significance criterion of $\alpha = 0.05$ (two-tailed), with exact p-values and effect sizes reported for each comparison.

4.3.1. Differences by Gender and Discipline

Motivational factors by gender: As shown in Figure 3, both male and female students reported nearly identical motivations. Both groups' top three motivators for learning were subject interest, career relevance, and academic performance, in virtually the same proportions. For example, 75% of male students and 78% of female students selected "interest in the subject", and 71% of males vs. 76% of females chose "career relevance" as a motivator. These differences were not statistically significant (all χ^2 tests for gender differences in each motivator yielded $p > 0.5$, with φ [phi] effect sizes around 0.05–0.09). Females were slightly more likely than males to endorse a few secondary motivators; for instance, 25% of female students (versus 17% of male students) chose "encouragement from teachers or family" and 31% of females (vs. 27% of males) selected "feedback from instructors". Conversely, males were slightly more likely to cite "peer collaboration" or "sense of belonging". However, none of these small gender gaps approached significance (all χ^2 p-values > 0.10, $\varphi < 0.10$). In sum, gender had no meaningful influence on why students are motivated to learn; men and women in this programme reported very similar reasons for engaging with their studies.

Barrier factors by gender: Similarly, the data revealed no significant gender-based differences in the barriers hindering class participation. As detailed earlier (RQ2), the most common obstacles for both male and female students were fear of mistakes and low confidence, followed by language or comprehension difficulties and habits of passivity, and this pattern held regardless of gender. When we disaggregated the barrier frequencies by gender (see Figure 4), males and females reported nearly the same rates for each of the top barriers. For example, 54% of female students versus 57% of male students cited fear of making mistakes as a reason for not speaking ($\chi^2(1) = 0.30$, $p = 0.58$), and 50% vs. 52% reported low confidence ($\chi^2(1) = 0.10$, $p = 0.75$). Only one barrier showed some evidence

of gender divergence; habitual passivity was reported by 20% of female respondents compared to 32% of males. This gap approached significance ($\chi^2(1) = 3.54$, $p = 0.060$) but did not meet the 0.05 threshold, and the effect size was small (Cramér's V = 0.091). We computed Cramér's V for several key barrier items to gauge the magnitude of gender differences, and all the values were in the "weak" range (V ≈ 0.05–0.09; see Table 2 for examples). For instance, for the gender difference in reporting "fear of mistakes", V = 0.065, and for "not understanding the question", V = 0.054, both indicating very weak associations with gender. In summary, gender was not a substantial differentiator in this TNE context; whatever discourages students from speaking up affects male and female students at roughly equal rates.

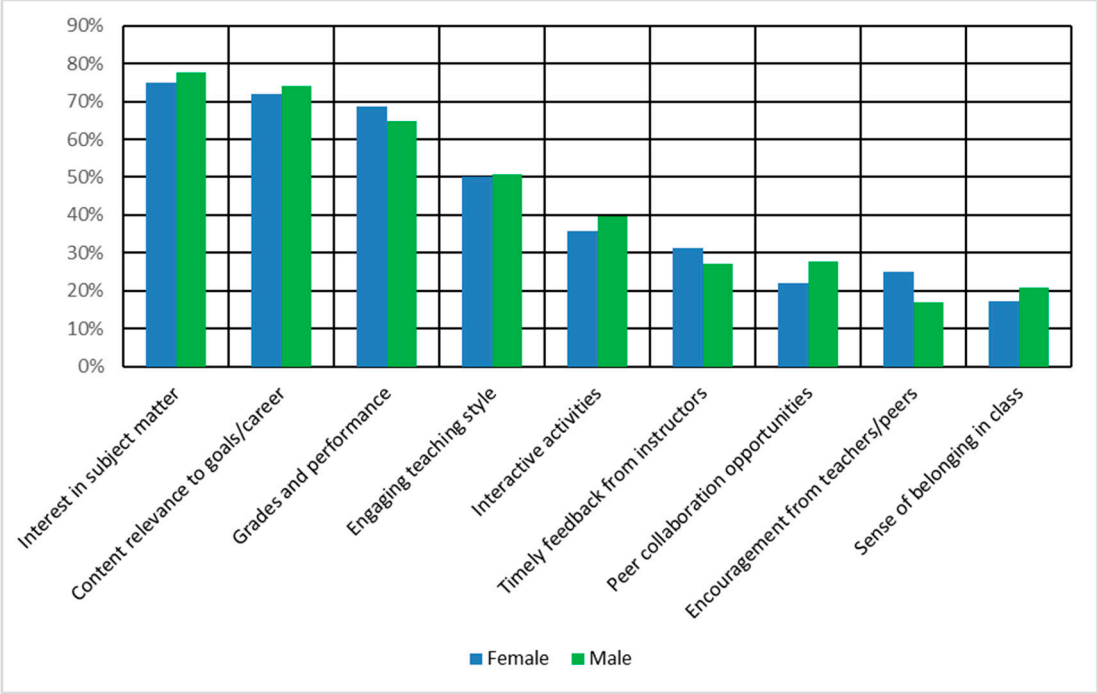

Figure 3. Gender-based comparison of student learning motivations in a transnational engineering programme.

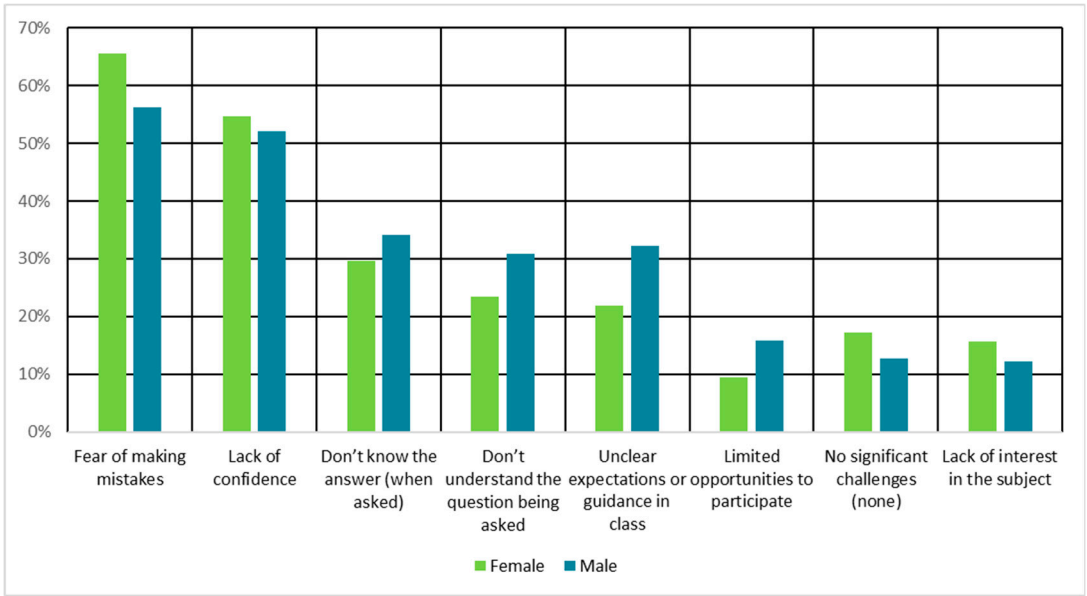

Figure 4. Gender-based barriers to class participation: psychological and linguistic challenges.

Table 2. Effect sizes (Cramér's V) for gender-based differences in reported participation barriers.

Barrier	Cramér's V	Interpretation
Fear of making mistakes	0.065	Weak effect
Passive learning habits	0.091	Weak effect
Do not understand the question	0.054	Very weak effect

Differences by engineering discipline: We also compared students across the five engineering majors (Electronic/Electrical, Mechanical, Computer Science, Civil, and Materials; see Table 1 for sample sizes). No statistically significant differences emerged in either motivations or barriers when broken down by discipline ($p > 0.1$ for all Chi-square and one-way analyses of variance (ANOVA) tests, as appropriate). Students in all programmes reported similar levels of interest, career focus, anxiety, and language difficulty. There were a few minor variations in the descriptive data; for example, Civil Engineering students (who, in this sample, were on average in a slightly higher year of study) reported lower language difficulty scores on a five-point scale (mean of ~3.1 vs. ~3.4 in other disciplines). Computer Science students reported more frequent pre-class preparation (mean ~4.2 vs. ~3.8 in different groups on a five-point frequency scale for preparation habits). However, these differences were minor (in the order of 0.2–0.3 points) and not statistically significant (t-tests for Civil vs. others on language difficulty yielded $p = 0.15$, Cohen's $d = 0.18$; ANOVA for prep frequency by major, $F = 1.8$, $p = 0.12$). The effect sizes for discipline-based contrasts were negligible (Cohen's $d < 0.2$ for all pairwise comparisons; $\eta^2 < 0.02$ for ANOVAs), indicating no practical difference. In sum, students face largely the same motivators and barriers regardless of their specific engineering field. This suggests that the participation challenges observed are systemic to the transnational classroom environment rather than tied to the characteristics of one particular major.

4.3.2. Students' Coping Strategies and Adaptive Behaviours

Beyond identifying barriers, the survey also asked how students approached or coped with these participation challenges. Several items assessed students' communication confidence and habits, particularly in terms of language use, class preparation, and help-seeking. Here, we present results on how students adapt their behaviour in attempts to participate or to compensate for not participating during class.

Language confidence in class: When asked about their comfort communicating with instructors in English, students, on average, only mildly agreed that they felt comfortable asking questions in English, whether during class, after class, or via email. On a five-point agreement scale (1 = strongly disagree; 5 = strongly agree), the mean response was $M = 3.66$ ($SD = 0.9$, $n = 400$), indicating a moderate level of confidence overall. Upon examining the distribution, we see that ~60% of respondents agreed or strongly agreed that they were comfortable approaching teachers in English, while the remaining ~40% were either neutral or did not feel comfortable doing so. In other words, two out of every five students still lack confidence in initiating questions or discussions in English. This is a critical finding in an English-medium instruction context; asking questions and seeking clarification are fundamental to learning, yet a significant minority of students hesitate to do so due to language-related discomfort. Notably, this hesitation persisted even among some upper-year students. There was a slight positive correlation between year of study and English-question comfort, with students in later years reporting being more comfortable; however, this effect remained small (Pearson $r = 0.14$, $p = 0.007$, $n = 397$). As illustrated by the year-wise trend in Figure 5, fourth-year students were only marginally more confident than second-year students in using English with instructors. In summary, language anxiety

remains a hurdle throughout the programme for many students. Furthermore, students reported limited English practice outside the classroom; only 48% of respondents agreed that they "often use English outside of class", while the rest were neutral or disagreed. This lack of practice likely contributes to ongoing anxiety in class. Simply spending more time in the programme (advancing from Year 2 to 4) does not eliminate English communication barriers for a significant subset of students without additional support.

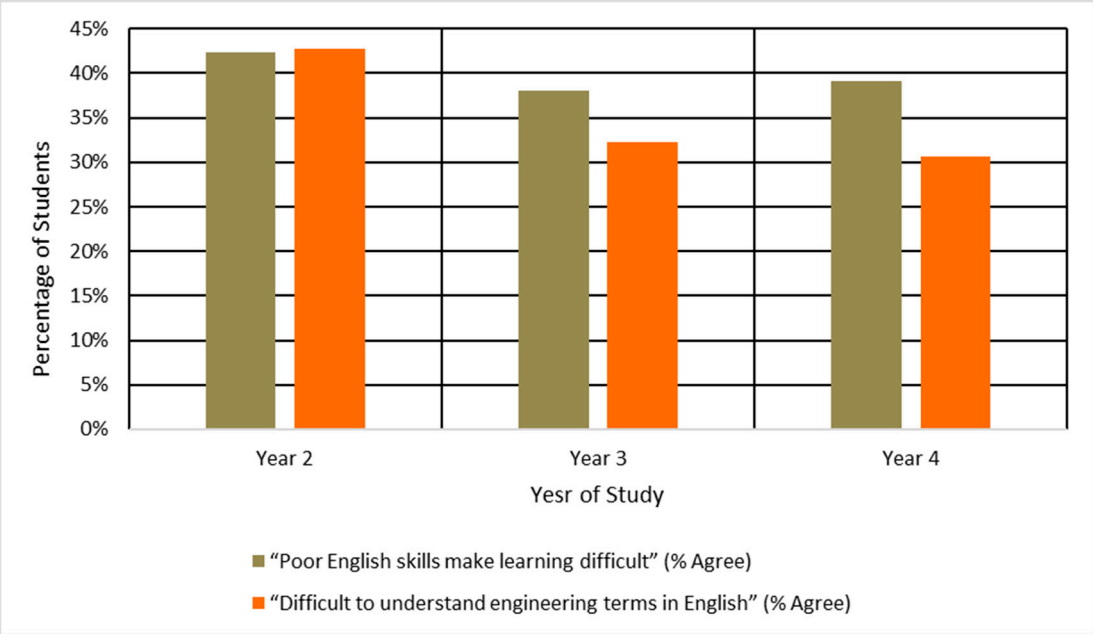

Figure 5. Trends in students reporting language-related barriers from Years 2 to 4.

Study habits and peer support: Despite their in-class apprehension, most students adopted proactive study behaviours to cope with the challenging classroom environment. Nearly 68% of respondents indicated that they prepared for class by reviewing slides or readings beforehand, and approximately 72% reported discussing coursework with peers outside of class, such as by comparing notes, studying in groups, or reviewing complex concepts together. These habits were everyday across genders and disciplines; male and female students reported nearly equal rates of pre-class preparation and peer discussion. Differing by only 3–5 percentage points, and Chi-square tests confirmed no significant gender differences ($p > 0.3$). Notably, these outside-of-class engagement strategies were associated with greater ease in participating during class. In our correlation analysis, the frequency of pre-class preparation and peer discussion showed moderate positive correlations with students' self-rated comfort participating in class (Pearson $r = 0.35$ for both, $p < 0.001$). In other words, students who regularly prepared for class and discussed coursework with friends tended to feel more confident contributing during lessons. This finding suggests that these coping strategies serve a scaffolding function; by building up knowledge and confidence before class, students alleviate some of the anxiety they might otherwise feel when put on the spot in class. It is also notable that these preparatory behaviours did not significantly correlate with the English-anxiety measures ($|r| < 0.10$, $p > 0.05$). Even students who were nervous about their English skills could boost their participation comfort through diligent preparation and peer support. Indeed, many students, in open-ended comments, affirmed the value of these tactics. They described strategies such as reading course materials in advance, formulating potential questions ahead of time, and debriefing complex concepts with classmates after class as ways to stay engaged with the content despite not often speaking out loud during class.

Prior educational background: The survey inquired about students' previous learning experiences, which shed light on their adaptation to the current active-learning environment. Over 70% of the sample reported that their pre-university schooling was predominantly lecture-based with very little interactive engagement. Furthermore, about 30% indicated that they were still struggling to adjust to the interactive style and often found themselves remaining in a passive role even in the current programme. This aligns with earlier findings (see RQ2) that many second-year students carry over passive habits from high school, providing context for why active participation is a challenge. Some students—especially by the fourth year—mentioned gradually feeling more accustomed to interactive classes, but others admitted that they had never fully adapted. In one open-text response, a student wrote that they "still feel like a listener rather than a participant" because listening quietly was the norm throughout their prior education. These reflections highlight that the shift from a teacher-centred, lecture model to a student-centred, active learning model is difficult for many, and this pedagogical transition contributes to some of the observed classroom silence.

Alternative participation and help-seeking strategies: Many students have found creative ways to cope with their reluctance to speak during class by engaging in alternative modes of participation. Qualitative feedback from 175 respondents (43% of the sample) revealed several recurring themes in how students navigate the classroom on their terms. A common strategy was "silent observation". Students reported that, if they did not feel comfortable speaking up during class, they would focus on listening attentively and taking thorough notes, seeking clarification later through other means. For example, some students described using after-class or online channels to ask questions—such as emailing the instructor, sending messages on learning platforms, or posting questions in course WeChat groups—rather than raising their hand in front of everyone. This approach allows them to obtain the help that they need without the stress of public speaking. Another prevalent strategy was the use of peer support during class. If students were confused, they often whispered a question to a friend sitting next to them or waited to discuss the problem with a classmate immediately after class, rather than asking the teacher in a public forum. In addition, several students emphasised independent learning as a coping mechanism; when they chose not to speak up to ask questions, they would re-study the textbook or lecture slides on their own, look up related instructional videos online, or complete extra practice problems to ensure that they understood the material. In essence, these self-driven methods enable students to achieve the learning objectives while remaining quiet in class—they represent adaptive behaviours that help students compensate for their lack of verbal participation.

On the other hand, the open-ended comments also highlighted areas where students struggle, despite these strategies, suggesting potential avenues for improvement. Several students expressed a desire for more opportunities to practice active participation in a low-pressure setting. For instance, some suggested incorporating more small-group discussions or in-class exercises, which could help them gradually build confidence to speak. Others requested additional resources to ease comprehension problems, such as bilingual glossaries for technical terms or obtaining lecture materials/slides in advance, to help them follow along and contribute to class. A minority of respondents mentioned that an excessive overall workload and the fast pace of the curriculum made it difficult for them to prepare or participate; one student noted that constantly worrying about maintaining a high GPA made them reluctant to speak up and risk making mistakes in front of others. Lastly, perceptions of the teaching style were mentioned; a few students felt that certain instructors spoke too fast, had accents that were hard to follow, or did not explain concepts clearly, which in turn discouraged questions and interaction. Not all the feedback was

negative, however. Approximately 23% of those who provided comments had neutral or positive remarks (e.g., "I think the class is fine, I just prefer listening" or "The content is interesting"). This suggests that a subset of students generally feel satisfied or untroubled by the class environment. Nevertheless, most of the comments centred on the challenges described above, reinforcing the quantitative findings that anxiety, language difficulty, and pedagogical factors are central concerns affecting participation.

Correlation analysis of key variables: To synthesise the relationships among the various factors measured, we computed Pearson correlation coefficients between students' ratings of key barriers, motivations, and behaviours (see Figure 6 for a correlation matrix heatmap of selected variables). This analysis, based on $n = 390$ students with complete data for the items in question, revealed two noteworthy clusters of variables. First, all the language-anxiety-related variables were strongly intercorrelated. For example, the survey items "English proficiency issues hinder my learning" and "I don't participate because of English" were highly correlated ($r = 0.65$, $p < 0.001$). Both were also associated with the item "I rarely speak English outside class" ($r = 0.44$, $p < 0.001$). This cluster of interrelated items indicates a coherent dimension of language barrier; students who flagged one English-related difficulty tended to report multiple problems related to using English, suggesting that language anxiety and limited English proficiency form a self-reinforcing obstacle to participation for many. Second, the confidence/comfort variables formed another cluster. Students' self-ratings of comfort asking questions in large lectures, comfort participating in small groups, and comfort interacting with instructors were all positively intercorrelated (with r values ranging from 0.40 to 0.55, all $p < 0.001$). These comfort measures, in turn, showed a negative correlation with the language-anxiety cluster, with an average correlation coefficient of $r = -0.12$ ($p < 0.05$). In other words, students who felt more confident and comfortable in engaging during class tended to feel slightly less hindered by language issues, though this inverse relationship was relatively weak.

Additionally, we found that active study habits, such as the frequency of pre-class preparation and peer discussion, were positively correlated with overall participation comfort ($r = 0.33$–0.39, $p < 0.001$) but had essentially no correlation with language anxiety (correlations near zero). This reinforces the idea that, while preparation and peer support help boost students' confidence to participate, these actions by themselves do not directly reduce the language difficulties students experience; instead, they help students cope despite those difficulties. Finally, we observed that a student's year of study had minor effects on these variables; being a more senior student (closer to graduation) was associated with a modest decrease in language anxiety ($r = -0.14$, $p = 0.005$) and a slight increase in overall participation comfort ($r = 0.14$, $p = 0.005$). These weak correlations align with the earlier observation of a gradual adjustment over time, with later-year students feeling somewhat more at ease, although this change is not substantial. We also noted that students who reported that the survey was easy to understand, which we used as a rough proxy for English comprehension ability, tended to have lower overall language anxiety ($r = -0.22$, $p < 0.001$).

In summary, the correlational analysis supports the following two dominant patterns in the data: (1) language anxiety is a distinct and pervasive barrier—students who struggle with one aspect of English often struggle with others, indicating a subgroup for whom language issues cluster together and substantially hinder participation; (2) confidence and preparation are associated with greater participation comfort—students who feel confident and who engage in preparatory behaviours tend to find it easier to participate, which suggests that building students' confidence (and giving them tools to prepare) can partially mitigate the effects of language barriers and fear. These findings underscore that

improving classroom participation may require both reducing language-related obstacles and bolstering students' confidence through supportive practices.

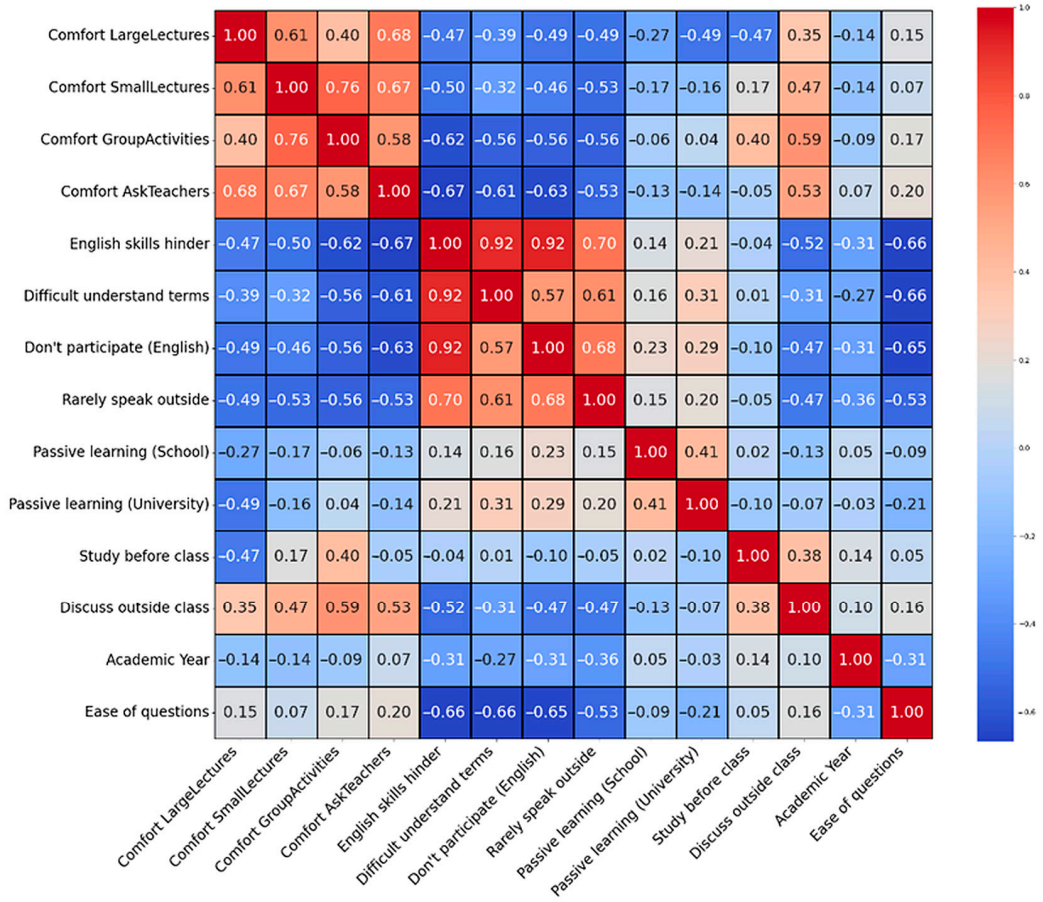

Figure 6. Correlation matrix (Pearson r) among key numeric-coded variables.

4.4. Summary of Results

Our findings reveal the "motivated-but-silent" learner phenomenon in this transnational engineering context. Students demonstrate high academic motivation (RQ1) yet face multiple overlapping barriers to participation (RQ2). Critically, these challenges are systemic rather than demographic; gender and discipline showed negligible effects (RQ3), suggesting that institution-wide rather than subgroup-specific solutions are needed.

The data reveal two key patterns. First, language-related anxieties cluster together ($r = 0.65$ between English barriers), forming a coherent dimension of constraint. Second, confidence and preparation behaviours correlate positively with participation comfort ($r = 0.35$), suggesting pathways for intervention. Students' adaptive coping strategies, including extensive preparation and peer support, demonstrate continued engagement despite vocal reticence. These results validate our blocked-pathway model; strong motivation exists but it is filtered through cultural, linguistic, and psychological barriers before being translated into a classroom voice. The following Discussion section interprets these findings within theoretical frameworks and explores practical implications for TNE engineering education.

5. Discussion

5.1. Summary of Key Findings

Our findings highlight a central paradox—students in this transnational engineering programme are highly motivated yet often remain hesitant to speak up in class. Most

participants reported a strong intrinsic interest in their studies and clear extrinsic incentives (e.g., career goals and grades) that encouraged participation. At the same time, more than half identified a fear of making mistakes and low confidence as key barriers preventing them from contributing. This tension between wanting to participate and fearing adverse outcomes aligns with broader research on classroom silence, which shows that students often stay quiet to avoid embarrassment or harsh evaluation (Downing et al., 2020). In our English-medium context, additional factors compounded this reticence: language difficulties, deeply ingrained deference to teachers, and prior passive learning habits all further discouraged open engagement. These patterns echo observations from other Asian EMI/English as a Foreign Language (EFL) classrooms where remaining silent is a common coping mechanism in the face of linguistic and cultural hurdles.

Notably, we found no significant differences in participation based on gender or academic major. This contrasts with many Western STEM settings, where studies often report male students dominating discussions and female students experiencing higher anxiety about speaking up (Aguillon et al., 2020). In our transnational programme, the usual gender gap appears to be overshadowed by the broader cultural and language-related challenges. Silence and participation barriers seem to be systemic across the student body, rather than confined to any one demographic subgroup. In other words, factors such as cultural norms (e.g., "saving face" and respect for authority) and second-language anxiety may be exerting a more substantial influence on classroom behaviour here than gender-based tendencies observed elsewhere. This is an unexpected finding that aligns with some prior observations in East Asian classrooms, attributing silence more to cultural context than to individual traits.

Across the board, students adopted various coping strategies to navigate these shared barriers. Common tactics included thorough preparation before class, seeking help and discussing coursework with peers outside of class, and actively listening and note-taking during class as a form of "silent" participation. The prevalence of these behaviours suggests that most quiet students are still cognitively engaged—they remain "tuned in" to the material even if they rarely voice their thoughts. In other words, silence in this context usually signals discomfort or inhibition rather than disengagement. Taken together, these results paint a picture of the "motivated but silent" learner—a student who genuinely values learning and participation yet stays quiet due to fear, language anxiety, or cultural pressure. This profile challenges the simple assumption that high motivation will automatically translate into speaking up. Instead, it highlights a complex interplay between individual motivation and contextual barriers, where a strong desire to contribute coexists with an equally strong apprehension. Recognising this paradox is essential for re-examining current engagement theories and for developing targeted strategies to better support such learners in the classroom. Experience offered only a modest buffer, with later-year students slightly more confident approaching instructors in English, but the effect was small and did not alter the overall pattern.

5.2. Theoretical Contributions

Our study contributes to educational theory by explaining why motivation does not always translate into observable participation, especially in cross-cultural settings. We extend existing motivation–engagement frameworks by identifying sociocultural and affective "filters" that can block even highly motivated students from speaking. For example, Self-Determination Theory (SDT) posits that fulfilling students' intrinsic interests and goals should foster engagement (Deci & Ryan, 2000). In our case, participants reported strong inherent motivation (a love of the subject) and a sense that participating would help them achieve their goals, yet many still did not speak out. Our findings extend

SDT by identifying sociocultural filters that mediate the autonomy–engagement pathway, particularly in EMI contexts where linguistic and cultural barriers create systematic blocks between intrinsic motivation and behavioural expression. Even self-driven learners may remain silent if environmental factors—such as fear of peer judgement or limited English proficiency—raise the psychological cost of participation. In high-context, non-Western learning environments, satisfying basic motivational needs may not suffice unless these external barriers are addressed. Thus, our findings support refining SDT by incorporating cultural and situational factors as potential moderators of the motivation-to-action pathway. Strong motivation can be present, but its expression (active participation) is contingent on a supportive context.

Similarly, our results suggest that Expectancy–Value Theory (EVT) requires augmentation for an English-medium international context. According to EVT, students engage in an activity based on the value they see in it and their expectation of success. In this study, students overwhelmingly valued class participation for learning and career development; however, many lacked confidence in their ability to contribute effectively in English. This low expectation of success—driven by language anxiety and a fear of making mistakes—undermined their high valuation of participation. Zhou and Curle (2024) observed a comparable pattern in a Chinese EMI programme, whereby English-language obstacles and prior lecture-centric schooling significantly dampened students' confidence and increased the "emotional cost" of speaking, even when students strongly valued engagement. In line with these findings, we argue that EVT-based models of engagement should integrate factors such as second-language confidence and culturally specific notions of face when applied to global classrooms. In a Second Language (L2) environment, a student's expectation of success is not purely an academic judgement—it is intertwined with their comfort in communicating and their fear of social embarrassment. Incorporating such factors would make expectancy–value frameworks more predictive of participation outcomes in diverse, multilingual settings.

Another theoretical implication involves the concept of Willingness to Communicate (WTC) in a second language. Prior studies have noted that Chinese students' WTC in class is often inhibited by cultural norms and anxiety rather than a lack of interest (MacIntyre et al., 1998; M. Zhang & Pladevall-Ballester, 2023). Our "motivated but silent" pattern reinforces this perspective: silence in our classrooms should not be mistaken for apathy but rather understood as a self-protective response to perceived threats (linguistic or social) in the environment. We even observed a potential feedback loop wherein collective silence and anxiety reinforce each other. Once a norm of not speaking is established, students become more reluctant to be the first to break it, which in turn heightens the overall tension and fear of speaking. This dynamic may help explain why an initially quiet class can maintain its silence despite students' internal eagerness to contribute. By illuminating these nuances, our study calls for expanding mainstream engagement theories to include such sociocultural filters and psychological intermediaries. Established motivational frameworks (SDT, EVT, WTC, etc.) should explicitly account for factors such as communication anxiety as mediators between motivation and participation and acknowledge that cultural context can either enable or block the expression of motivation. Distinguishing between truly unmotivated students and those who are motivated but thwarted by context is a key contribution of this work. We shift the discussion beyond asking "How motivated are students?" to ask, "What allows or prevents motivated students from acting on their motivation?" This broader question bridges psychological constructs of motivation with the realities of globalised classrooms. In doing so, it also speaks to the well-documented "paradox of the Chinese learner", wherein students from high-context educational cultures can excel academically yet appear passive in class (Lai & Jung, 2024). Our findings provide

a context-sensitive lens for understanding this paradox, offering a framework in which high motivation can coexist with silence due to social–emotional constraints.

5.3. Practical Implications

Understanding the "motivated but silent" phenomenon has several practical implications for teaching in international and multicultural classrooms. Instructors and institutions can leverage these insights in the following ways to create conditions that unlock students' willingness to participate:

i. Cultivate a culturally responsive classroom: Western active-learning techniques may not automatically succeed in an East Asian context without adaptation. Educators should recognise that ingrained cultural norms—such as deference to teacher authority and valuing listening over speaking—influence student behaviour. Rather than viewing silence simply as disengagement, instructors can reframe it as a form of respectful reservation or uncertainty. The teacher's role is pivotal; by adopting a warm, approachable demeanour and explicitly encouraging questions, instructors can lower the psychological cost of speaking. Small changes, such as allowing longer wait times after questions, openly acknowledging that making mistakes is part of the learning process, and responding to student contributions with positive reinforcement, can help ease students' fear of negative evaluation. Research has shown that, when instructors emphasise approachability and empathy, student participation improves markedly.

ii. Integrate language support into learning: Language anxiety was a significant factor preventing students from speaking up, which means that active learning strategies in EMI programmes should include linguistic scaffolding. In practice, this could involve providing key technical terms in advance (or in bilingual glossaries), permitting brief discussions in students' first language to clarify complex concepts, or offering optional academic English workshops. During class, instructors might use alternative participation formats that do not rely solely on oral English fluency, such as written reflection prompts, instant polling apps, or online discussion boards. These low-stakes channels allow students to demonstrate their understanding without the pressure of speaking in front of the whole class. Over time, as students see their written or anonymous contributions valued, their confidence to speak aloud may grow. The broader goal is to create an inclusive environment where various modes of participation are acknowledged and rewarded, helping linguistically hesitant students engage more comfortably.

iii. Build students' communication confidence: Because lack of self-confidence was one of the most widespread barriers, instructors should implement activities that strengthen students' self-efficacy in speaking. Structured small-group discussions, for instance, allow students to practice expressing their ideas to a few peers rather than a large class—a less intimidating step toward full-class dialogue. In addition, using formats like think–pair–share or requiring rotational reporting from groups can ensure that speaking turns are shared and expected, reducing the uncertainty of volunteering. It is also crucial to normalise mistakes and questions as natural parts of learning. Teachers might deliberately share examples of their past misunderstandings or emphasise that any question is welcome. Such transparency helps create a classroom culture where students trust that they will not be ridiculed for speaking up. Indeed, studies of undergraduate science courses have noted that the fear of peer judgement is a significant deterrent to participation, especially for students who feel stereotyped or under extra scrutiny (Aguillon et al., 2020). While we did not observe a gender gap in our setting, all students stand to benefit from a supportive atmosphere in which their comments and questions are met with respect.

iv. Align pedagogy with students' prior learning experiences: Introducing active learning gradually in ways that connect to familiar practices can help students adjust to a participatory classroom. Many of our students came from educational backgrounds that emphasised listening and memorisation over discussion. In such cases, instructors might begin by engaging students through activities that feel like a natural extension of their study habits (e.g., writing short reflections or solving problems individually) before moving to open debates or impromptu problem-solving in class. The idea is to scaffold interactive skills rather than plunging students into a format they find alien. Our data suggested that students do acclimate over time; senior students reported slightly lower anxiety and greater ease in participating, likely due to their increased experience. Educators can accelerate this acclimation by being explicit about participation expectations and even co-creating discussion norms with the class. For example, an instructor might invite students to share why they sometimes feel hesitant and then collectively brainstorm ways to make the environment more inviting. Giving students a voice in setting ground rules (such as no mocking of mistakes or rotating who speaks for group work) signals that the instructor is partnering with them to overcome silence, not simply pressuring them. These strategies resonate with the principles of inclusive teaching, which aim to create a safe space for all learners to contribute and have their voices heard.

In summary, motivation alone is not enough—educators must actively remove or reduce the barriers that impede motivated students from participating in learning. By cultivating a classroom atmosphere of trust, providing both linguistic and psychological support, and adapting teaching methods to fit the cultural context, instructors can tap into the latent engagement of these "silent" learners. The goal is to transform the classroom into an environment where active participation feels accessible and rewarding for every student, thereby allowing their underlying motivation and curiosity to fully manifest in their learning experience.

5.4. Limitations and Future Research

While this study provides valuable insights into participation barriers in a Sino-foreign engineering programme, several limitations should be acknowledged, each pointing to directions for future research:

i. Limited context and generalizability: Our data come from a single transnational programme in China, which may limit the generalizability of the findings to other settings. The "motivated but silent" profile that we identified might manifest differently in non-Chinese or non-engineering contexts. Future studies should investigate similar questions in various transnational education environments and cultural contexts. Comparative research across multiple international branch campuses (in East Asia, the Middle East, Africa, etc.) would help determine whether the patterns observed here are widespread or context specific. Notably, a recent case study at a Sino-US joint campus in China uncovered similar reasons for student silence and described comparable student and teacher coping strategies (Noman & Xu, 2023). Gathering such multi-site evidence would validate and refine the "motivated but silent" typology on a broader scale, helping to disentangle which barriers are truly cultural versus those more related to language or pedagogy.

ii. Self-selection bias in respondents: Participation in our survey and interviews was voluntary, introducing the possibility of self-selection bias. Students who chose to respond were likely those who were more reflective about participation or more concerned about the issue; alternatively, they may have been among the more academically motivated students. By contrast, students with very low English proficiency or those

who were completely disengaged might have been underrepresented, either due to lack of interest or because the survey was in English. Future research should strive for more inclusive sampling strategies to capture a broader range of student voices. For instance, administering surveys in class (to boost response rates) or offering the questionnaire in the students' native language could encourage input from less confident English speakers. Additionally, targeted qualitative studies could deliberately recruit students who rarely participate in class to see whether their reasons for silence align with our findings or reveal new factors. Ensuring that even the quietest or most anxious students are heard will give a more complete picture of the phenomenon.

iii. Cross-sectional design: Our study provides a snapshot of student attitudes and behaviours at one point in time, which limits our ability to understand how participation may evolve. We observed some evidence that experience might improve comfort with speaking up, including slightly lower anxiety among senior students; however, we cannot confirm whether today's hesitant first-year students will become more vocal by their final year. Longitudinal research is needed to track changes in participation and motivation over time within the same cohort. A longitudinal mixed-methods approach—like that used by Zhou and Curle (2024) to study EMI motivation—could follow a group of students from their first year to graduation. Such a design would clarify developmental trends and causality. For example, it could reveal whether repeated exposure to active-learning classes gradually reduces students' fear or identify critical "turning points" when a once-silent student becomes more participatory (or vice versa). Longitudinal studies could also test interventions, such as implementing a confidence-building programme or providing extra language support in one semester and then observing whether those students participate more in later semesters. Moving beyond cross-sectional data in this way would enormously enrich our understanding of how a motivated but silent student can change over the college years with increased exposure and support.

iv. Reliance on self-reported data: Another limitation is that our measures of motivation, anxiety, and class participation were all self-reported by students. Self-reports are subjective and prone to bias; students might overestimate their engagement level or underreport certain feelings due to social desirability concerns. Moreover, the reasons students think that they are silent may not capture all the underlying factors—some influences could be subconscious or taken-for-granted. To complement self-report data, future research should incorporate more objective or observational indicators of participation. Classroom observations by neutral observers, for example, could document how frequently different students speak and under what conditions, providing an external measure of involvement. Video recordings or ethnographic notes might capture nuances of "engaged silence" (e.g., students who are alert and taking notes versus those who are genuinely disengaged but quiet). Additionally, gathering instructors' perspectives would be valuable; teachers can often identify which students are consistently silent and might offer insights into classroom dynamics that students themselves do not articulate. Triangulating student, instructor, and observational data in future studies would create a more robust understanding of the silence phenomenon. Such an approach might also uncover discrepancies—for instance, if students claim language is a barrier but instructors observe those same students conversing fluently in informal settings, it could point to performance anxiety specific to the formal class context rather than a pure language deficit.

v. Scope of quantitative analysis: Our analysis was primarily descriptive (frequencies and correlations), which was suitable for initial exploration but means that we did not formally test a multivariate model of the relationships between variables. Future research

could apply more advanced statistical modelling to untangle the interplay among motivation, anxiety, and participation. For example, structural equation modelling (SEM) or path analysis could be used to examine how multiple factors simultaneously influence class participation. SEM could posit a latent "participation inhibition" factor, indicated by variables such as communication anxiety, low confidence, and a high fear of negative evaluation, and then test how students' motivation feeds into this factor and ultimately affects participation frequency. Prior work on willingness to communicate has utilised such models (e.g., consistent with Peng and Woodrow's (2010) WTC model in Chinese EFL classrooms) to identify mediators and moderators of speaking behaviour. Similarly, if data were collected across different courses or institutions, multilevel modelling could help parse out classroom-level effects, such as instructor style and class size, from individual student effects. By employing these sophisticated techniques, future studies can better isolate cause-and-effect pathways and explore interactions, thereby contributing to a more nuanced and quantitative theoretical model of the "motivated but silent" phenomenon.

vi. Narrow stakeholder perspective: Finally, our study focused on student perceptions and did not formally include input from instructors or administrators. This is a notable limitation because any effort to reduce classroom silence will likely involve changes in teaching practice and institutional support. Future research should therefore adopt a multi-stakeholder perspective. For example, interviewing teachers in transnational programmes could reveal how they interpret student silence, what strategies they have tried to encourage participation, and what challenges they face in doing so. It would be illuminating to document how instructors adjust their pedagogy over time in response to initially unresponsive classes—do they develop techniques to draw out quiet students, and which approaches do they find successful or unsuccessful? Institutional factors are also relevant; policies on class size, the availability of language support services, or faculty training in inclusive pedagogy might significantly impact the participation climate. Including administrative viewpoints or policy analyses could show how top–down decisions create conditions that either exacerbate or alleviate student reticence. Recent research is beginning to explore these angles. For instance, a qualitative study that included both student and faculty interviews at a foreign branch campus identified several effective instructor strategies for addressing student silence, as well as students' suggestions for improvement (Noman & Xu, 2023). Building on such work, future projects may even involve co-designing interventions in which educators and students collaborate to make classes more interactive and welcoming. Broadening the lens beyond just students will ensure that any proposed solutions are realistic, culturally appropriate, and supported by those who implement them in the classroom.

vii. We acknowledge this as a limitation and note that future studies could strengthen methodological transparency by reporting inter-rater reliability statistics.

Acknowledging these limitations provides a roadmap for further inquiry. Each limitation points to a way to deepen and extend our understanding, whether by testing our findings in new contexts, using different methodologies, or incorporating additional perspectives. Addressing these gaps in future studies will not only strengthen the evidence base on why motivated students may remain silent but also inform more effective, evidence-based strategies to engage them. Our investigation, therefore, opens up several critical questions: How universal is the "motivated but silent" phenomenon across different cultures and educational systems? What interventions are most effective at converting silence into speech? How can educational programmes better support learners who are eager to succeed yet struggle to find their voice? Tackling these questions will be crucial

for fully realising the promise of active learning in an increasingly globalised and diverse higher education landscape. By doing so, researchers and practitioners can ensure that high student motivation is not lost in translation, and that the next generation of global engineers (and other professionals) can confidently contribute in any classroom environment.

6. Conclusions and Implications

This study reveals a paradox in transnational engineering education: students are highly motivated yet often remain silent in class due to overlapping psychological, linguistic, and cultural barriers. Their reluctance to speak up is not a personal shortcoming, but a systemic issue stemming from fear of mistakes, low confidence, language anxiety, and cultural norms. By identifying the "motivated but silent" learner typology, this research adds nuance to our understanding of motivation and participation, showing that strong motivation does not automatically translate into vocal engagement when context inhibits it. These findings underscore the need for multi-layered interventions. Below, we present concise implications at the teaching, programme, and institutional levels, aiming to foster more inclusive participation without rehashing detailed results or theory.

6.1. Implications for Teaching Practice

This research presents the following implications for teaching practice:

i. Foster Psychological Safety: Cultivate a supportive classroom climate through low-stakes interactive formats and trust-building. When students feel safe from ridicule or harsh judgement, they are more willing to contribute despite anxiety.
ii. Embed Linguistic Support: Integrate language scaffolding such as pre-teaching key terminology, providing bilingual or visual aids and pacing speech clearly. This helps students overcome English-language anxiety and participate with greater confidence.
iii. Set Clear Expectations and Model Engagement: Make participation guidelines explicit and demonstrate interactive behaviours (e.g., asking questions and inviting discussion). Clarifying what is expected and showing how to engage lowers uncertainty, especially for those from passive-learning backgrounds.
iv. Diversify Participation Modes: Use varied activities and assessments to validate quieter forms of engagement. For example, include written reflections, small-group tasks, or anonymous polls so that even students who are hesitant to speak can contribute and be acknowledged.
v. Co-Create Inclusive Norms: Involve students in establishing class norms and use culturally responsive teaching strategies. By collaboratively defining how discussions will work and valuing diverse communication styles, educators can bridge cultural gaps and make every student feel their contribution is valued.

6.2. Implications for Curriculum and Programme Design

A programme curriculum should proactively prepare and support students in active participation. In the foundation year, beyond teaching English and technical basics, there should be deliberate introduction of interactive learning methods and participation skill-building. Early exposure to collaborative activities, clear discussion norms, and confidence-building exercises can improve students' readiness to speak up in later years. Additionally, these participatory practices and language supports should be reinforced across all years of the programme. By embedding active learning and communication skills development throughout the curriculum and not just assuming students will adapt over time, the programme can ensure that gains made in the first year are sustained and that students continue to grow more comfortable and competent in engaging during class.

6.3. Implications for the Institution and Broader Context

At the institutional level, a holistic commitment is needed to overcome systemic silence. Institutions should provide faculty development on inclusive, culturally responsive pedagogy so that instructors across the board are equipped to handle multilingual and multicultural classrooms. Policies and resources can support this goal—for instance, offering additional language support services, mentorship programmes, or smaller discussion forums to help less-confident students practice communication. Recognising that "motivated but silent" learners likely exist in other international or post-pandemic classrooms, institutions should share and implement these insights beyond a single programme. By addressing participation barriers on a broad scale, universities not only improve their own teaching outcomes but also contribute to quality and equitable educational goals (e.g., Sustainable Development Goal 4). In reframing student silence as a culturally mediated response rather than a lack of effort, educational institutions can lead the way in creating learning environments where motivation translates into voice for all students.

Author Contributions: Conceptualisation: K.K. and N.A.; methodology: K.K. and C.L.; data analysis: K.K.; writing—original draft: K.K.; writing—review and editing: C.L. and N.A.; project administration: K.K., N.A., and C.L. All authors have read and agreed to the published version of the manuscript.

Funding: The third author is supported by the research project "Enabling collaborative academic development, research & entrepreneurship (eCADRE) across UK-China TNE project" led by the UK-China Joint Institute Alliance. The research project is funded by the British Council's "2021 Enabling Grants to Strengthen UK-China Institutional Partnerships through academic collaboration". This project is supported by a "Going Global Partnerships—Enabling Grants UK-China 2021" grant from the British Council (grant number: CHI/2021/005), in supporting and strengthening UK-China Institutional Partnerships through academic collaboration, as part of a wider British Council programme called Going Global Partnerships, which builds stronger, more inclusive, internationally connected higher education and TVET systems. For more information, please visit www.britishcouncil.org/going-global-partnerships (accessed on 20 July 2025).

Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki guidelines and approved by the Research Ethics Committee of the Faculty of Engineering and Physical Sciences at the University of Leeds on 13 July 2024 (Document Number 1677).

Informed Consent Statement: Informed consent was obtained from all subjects involved in this study.

Data Availability Statement: All relevant data will be made available upon request to the corresponding author.

Acknowledgments: The authors thank the Faculty of Engineering and Physical Sciences at the University of Leeds and the SWJTU–Leeds joint school in China for their support of this research study.

Conflicts of Interest: The authors declare no conflicts of interest.

References

Aguillon, S. M., Siegmund, G., Petipas, R. H., Drake, A. G., Cotner, S., Ballen, C. J., & Eddy, S. L. (2020). Gender differences in student participation in an active-learning logy classroom. *CBE—Life Sciences Education*, *19*, ar12. [CrossRef] [PubMed]

Araghi, T., Busch, C. A., & Cooper, K. M. (2023). The aspects of active-learning science courses that exacerbate and alleviate depression in undergraduates. *CBE—Life Sciences Education*, *22*, ar26. [CrossRef] [PubMed]

Chen, Y., Yang, H., & Zhang, S. (2024). Fostering engagement in online learning: A sociocultural perspective. *International Journal of Smart Technology and Learning*, *6*, 45–63.

Curle, S., Rose, H., & Yuksel, D. (2024). English-medium instruction in emerging contexts: Editorial introduction. *System*, *122*, 103262. [CrossRef]

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and self-determination of behaviour. *Psychological Inquiry*, *11*, 227–268. [CrossRef]

Derakhshan, A., & Fathi, J. (2024). Longitudinal exploration of interconnectedness through a cross-lagged panel design: Enjoyment, anxiety, willingness to communicate, and L2 grit in English language learning. *Journal of Multilingual and Multicultural Development*, 1–19. [CrossRef]

Downing, V. R., Cooper, K. M., Cala, J. M., Gin, L. E., Brownell, S. E., & Coley, J. (2020). Fear of negative evaluation and student anxiety in community college active-learning science courses. *CBE—Life Sciences Education*, *19*, ar20. [CrossRef]

Driessen, E. P., Knight, J. K., Smith, M. K., & Ballen, C. J. (2020). Demystifying the meaning of active learning in postsecondary biology education. *CBE—Life Sciences Education*, *19*, ar52. [CrossRef]

Duncan, V. L., Holt, E. A., & Keenan, S. M. (2023). Creating an equitable and inclusive STEM classroom. *Frontiers in Education*, *8*, 1154652. [CrossRef]

Duran, M. J., Aciego, J. J., Gonzalez-Prieto, I., Carrillo-Rios, J., Gonzalez-Prieto, A., & Claros-Colome, A. (2025). A gamified active-learning proposal for higher-education heterogeneous STEM courses. *Education Sciences*, *15*, 10. [CrossRef]

Edmondson, A. (2018). *The fearless organisation: Creating psychological safety in the workplace for learning, innovation, and growth*. Wiley.

Galloway, N., & Rose, H. (2021). Englishization of higher education: Challenges and possibilities. *System*, *99*, 102511.

Galloway, N., & Ruegg, R. (2020). The linguistic challenges of EMI and the role of EAP. *System*, *93*, 102280.

Guenther, A. R., & Abbott, C. M. (2024). Think–pair–share: Promoting equitable participation and in-depth discussion. *PRiMER*, *8*, 7. [PubMed]

Huerta, M. V., Sajadi, S., Schibelius, L., Ryan, O. J., & Fisher, M. (2024). An exploration of psychological safety and conflict in first-year engineering student teams. *Journal of Engineering Education*, *113*, 635–666. [CrossRef]

Johnson-Ojeda, V., Hill, L. B., Shin, S., York, A. M., & Frey, R. F. (2025). Measuring STEM instructors' learning of and growth in inclusive teaching: Development and evaluation of the STEM faculty inclusive teaching survey (FITS). *CBE—Life Sciences Education*, *24*, ar18. [CrossRef]

Kearney, T., Raddats, C., & Qian, L. (2024). Enabling international student engagement through online learning environments. *Innovations in Education and Teaching International*, *62*(4), 1291–1304. [CrossRef]

Lai, M., & Jung, J. (2024). Internationalisation with Chinese characteristics: Exploring the paradox in students' experiences at Sino-foreign cooperative universities. *Studies in Higher Education*, *45*(7), 1514–1527. [CrossRef]

Lai, M., & Jung, J. (2025). Pathways to master's education: Insights from students in transnational higher education in China. *Higher Education*, *89*, 937–952. [CrossRef]

Li, C., Dewaele, J.-M., & Hu, Y. (2023). Foreign language learning boredom: Conceptualization and measurement. *Applied Linguistics Review*, *14*(2), 223–249. [CrossRef]

Li, M., & Pei, L. (2024). Academic language-related skills challenges for EMI undergraduates: A Chinese context. *Acta Psychologica*, *247*, 104309. [CrossRef]

Liao, S. J., Zhang, L. J., & May, S. (2025). English-medium instruction (EMI) language policy and implementation in China's higher education system: Growth, challenges, opportunities, solutions, and future directions. *Current Issues in Language Planning*, *26*, 1–20. [CrossRef]

Liu, Y., She, R., & Xing, J. (2025). Analysis of university students' mental health from the perspective of occupational harmony. *PLoS ONE*, *20*(4), e0309490. [CrossRef]

MacIntyre, P. D., Clément, R., Dörnyei, Z., & Noels, K. A. (1998). Conceptualizing willingness to communicate in a L2. *The Modern Language Journal*, *82*, 545–562. [CrossRef]

McClintock, A. H., Fainstad, T., Blau, K., & Jauregui, J. (2023). Psychological safety in medical education: A scoping review and synthesis of the literature. *Medical Teacher*, *45*(11), 1290–1299. [CrossRef] [PubMed]

Noman, M., & Xu, R. (2023). Breaking the silence: Exploring the challenges of oral participation faced by Chinese undergraduate students in a Sino–US university in China. *Asian Education and Development Studies*, *12*(4/5), 275–286. [CrossRef]

Peng, J.-E., & Woodrow, L. (2010). Willingness to communicate in English: A model in the Chinese EFL classroom. *Language Learning*, *60*(4), 834–876. [CrossRef]

Pevec-Zimmer, S., Juang, L. P., & Schachner, M. K. (2024). Promoting awareness and self-efficacy for culturally responsive teaching of pre-service teachers through the identity project: A mixed methods study. *Identity: An International Journal of Theory and Research*, *24*(3), 1–19. [CrossRef]

Reynolds, B. L., Xie, X., & Pham, Q. H. P. (2023). The potentials for incidental vocabulary acquisition from listening to computer science academic lectures: A corpus-based case study from Macau. *Frontiers in Psychology*, *14*, 1219159. [CrossRef]

Tang, Y., & He, W. (2023). Meta-analysis of the relationship between university students' anxiety and academic performance during the COVID-19 pandemic. *Frontiers in Psychology*, *14*, 1018558. [CrossRef]

Theobald, E. J., Hill, M. J., Tran, E., Agrawal, S., Arroyo, E. N., Behling, S., Chambwe, N., Cintrón, D. L., Cooper, J. D., Dunster, G., Grummer, J. A., Hennessey, K., Hsiao, J., Iranon, N., Jones, L., II, Jordt, H., Keller, M., Lacey, M. E., Littlefield, C. E., . . . Freeman, S. (2020). Active learning narrows achievement gaps for underrepresented students in undergraduate STEM. *Proceedings of the National Academy of Sciences of the United States of America*, *117*, 6476–6483. [CrossRef]

Wang, H., Patterson, M. M., & Peng, A. (2024). Predictors of second language willingness to communicate among US undergraduate students: Classroom social climate, emotions, and language mindset. *Language Teaching Research*. [CrossRef]

Wei, S., & Han, Y. (2025). A call to foster psychological safety to facilitate inclusive and effective engineering student teams and learning. *Engineering Education Review*, *2*, 172–181. [CrossRef]

Wingrove, P., Zuaro, B., Yuksel, D., Nao, M., & Hultgren, A. K. (2025). English-Medium instruction in European higher education: Measurement validity and the state of play in 2023/2024. *Applied Linguistics*, *46*, amaf020. [CrossRef]

Yep, B. L. W., Tan, T. K., & Fung, F. M. (2023). How partial anonymity may reduce students' anxiety during remote active learning—A case study using Clubhouse. *Journal of Chemical Education*, *100*(2), 459–468. [CrossRef]

Yu, S. Y., & Kaur, J. (2024). Increasing student comprehension in the English-medium instruction (EMI) context: Lecturers' use of explicitness strategies. *International Journal of Educational Research Open*, *7*, 100334. [CrossRef]

Zhang, M., & Pladevall-Ballester, E. (2023). Students' English-medium instruction motivation in three EMI courses in China. *Frontiers in Psychology*, *14*, 1077852.

Zhang, Q., Song, Y., & Zhao, C. (2024). Foreign language enjoyment and willingness to communicate: The mediating roles of communication confidence and motivation. *System*, *125*, 103346. [CrossRef]

Zhou, Y., & Curle, S. (2024). Decoding motivation in English medium instruction: Situated expectancy–value theory and student performance at a Chinese transnational university. *Journal of Multilingual and Multicultural Development*. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.