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From Silence to Speech: Breaking the Communication Barrier in Engineering English Classes

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Abstract

In Indian engineering institutions, especially in linguistically diverse urban regions like Delhi, a significant number of students remain silent in English language classrooms despite years of formal instruction. This paper explores the psychological, pedagogical, and sociocultural factors behind communication barriers in engineering English classes and proposes a student-responsive intervention model to transform passive learners into active communicators. The study, conducted across three engineering colleges in Delhi, employed a mixed-method approach to measure improvements in participation, fluency, and confidence. Results highlight the importance of interactive, low-anxiety environments and task-based language learning in overcoming silence.

Keywords: English communication, engineering education, classroom silence, ESL, speaking anxiety, Intervention model, Student participation

1. Introduction

Silence in English language classrooms, particularly within engineering colleges across India, has emerged as a persistent and multifaceted pedagogical concern. Despite the growing emphasis on oral communication as a critical employability skill in the globalized corporate and technical landscape, a large segment of engineering undergraduates continues to exhibit verbal reticence in English language classes. This silence is not a mere indicator of linguistic incompetence; rather, it is the outcome of a complex interplay of psychological, cultural, linguistic, and institutional factors that inhibit students from participating vocally [1]. A major contributing factor is the socio-educational background of the students. Many engineering students in India come from regional language medium schools—such as Hindi, Punjabi, Tamil, or Marathi—and experience an abrupt transition to an English-dominated academic environment in higher education [2]. This transition often results in communicative insecurity, wherein learners are cognitively capable of understanding English but are hesitant to speak due to low exposure to spoken English, limited vocabulary, and the fear of making grammatical or pronunciation errors [3]. As Krashen's Affective Filter Hypothesis suggests, high levels of emotional barriers such as anxiety, fear of peer evaluation, and low self-confidence significantly hinder the acquisition and use of a second language [4]. These "filters" prevent input from becoming intake, thereby impeding both comprehension and verbal production. The issue is further exacerbated by the rigidity of the Indian academic structure, which continues to prioritize rote memorization, grammatical precision, and written assessments over communicative competence. English language teaching in engineering colleges is often reduced to syllabus completion and exam preparation, sidelining the real-world communicative needs of students. Drawing on Freire's critique of the "banking model" of education, and later expanded by Kumaravadivelu [5], the teacher is viewed as the depositor of knowledge, while students passively receive information without engaging in authentic dialogue. In such a top-down model, opportunities for student-generated speech are minimal and often limited to brief, rehearsed answers to teacher-posed questions, stifling spontaneous and meaningful use of language [6].

Social and cultural dynamics also play a substantial role in reinforcing classroom silence. In co-educational technical colleges, gender norms and familial expectations often discourage female students from speaking freely, especially in mixed-gender settings. Students from conservative backgrounds may feel restrained by societal conditioning that views assertive communication as inappropriate [7]. Additionally, the peer environment—where fluency is frequently equated with sophistication or urban identity—can lead to a fear of ridicule, particularly among students from rural or semi-urban areas [8]. As a result, many learners internalize a linguistic hierarchy that devalues their contributions and causes them to

withdraw. Importantly, this research recognizes that silence does not always equate to disengagement. As Sen (2016) noted, many silent students are mentally engaged—processing information, taking notes, or rehearsing answers internally—even if they do not voice them aloud [9]. However, prolonged verbal silence deprives learners of the essential practice needed for oral fluency, spontaneity, and pragmatic competence, which are all crucial for effective communication in professional and social contexts.

The ability to communicate effectively transcends geographical, cultural, and temporal barriers; it is the bedrock of all human connection. Not only do words play a role, but so do non-verbal clues, emotions, and understanding. Whether it's in our personal relationships, our professional collaborations, or our contacts with society at large, effective communication is crucial. Success and productivity in today's linked and fast-paced corporate environment depend on the ability to communicate effectively. Collaboration and teamwork, dispute resolution, employee engagement and relationship building, clear direction and alignment, employee innovation and creativity, and overall workplace success are all greatly enhanced by effective communication. Vaughan (2022) argues that in business, there is continual interaction between different types of parties, such as clients, workers, and management. By keeping everyone in the loop, good communication reduces the likelihood of misunderstandings, discontent, and distrust. Furthermore, it is essential to guarantee efficient communication between employees prior to establishing successful communication with external parties. Furthermore, nearly every facet of a business's operations—from product creation to customer encounters to personnel management—relies on effective communication (Richards, 2019). Communication in the workplace refers to the exchange of ideas and information between workers. All forms of professional communication are included in this, including in-person meetings, emails, instant messaging, videoconferencing, and phone conversations. Eye contact, body language, and vocal intonation are all forms of nonverbal communication that are just as important in the workplace as verbal communication. The year 2023 was mentioned by Carola. Firstup (2021) states that as part of an organization's internal communications objectives, employees engage in workplace communication to exchange information and ideas. Whether in person or online, efficient communication is crucial for completing any assignment. This is corroborated by USC Annenberg (n.d.), which outlines the various ways in which an organization or business can benefit from excellent communication. A more cohesive team could be the result of employees who know how to speak to the right people inside the organization. Communication that is both honest and direct has the potential to foster optimism and trust, which in turn raises morale and job satisfaction. Building a solid culture of communication can also help encourage the sharing of ideas, which could result in more innovation and creativity. The ability of bosses and other leaders to communicate with their subordinates is crucial. Employers that put effort into effective communication with their employees are more likely to build trust with them, which in turn boosts morale, productivity, and production (Workpay, 2019). In addition, those who are good at communicating with both customers and coworkers are considered as assets to any company. Each project's overall efficacy can be enhanced if leaders enhance communication to gain a better understanding of their employees' abilities and skills. This will allow them to provide clear directions to the persons most suited for the task at hand (Efectio, 2020). Nevertheless, there are many obstacles to good communication, which can lead to misunderstandings, inefficiency, and disputes at work, despite the importance of it. In addition, the difficulties of communicating successfully at work are more noticeable than ever before due to the effects of the COVID-19 epidemic. Martic (2023) lists a number of recent developments that have made it more difficult for employees to communicate effectively in the workplace. These include workplaces that include employees of different generations, more remote work, a dispersed workforce, new communication technologies, and different expectations from employees. However, workplace communication issues predated the pandemic. They distort messages,

which can lead to misunderstandings and even offense in some cases (Beqiri, 2018). One definition of a communication barrier is anything that makes it harder to hear and understand what other people are trying to say. This includes both spoken and written language (Rani, 2016). Basically, when information cannot be communicated effectively due to certain traits or circumstances, we say that there are communication obstacles. Disruptions to the free flow of information and the emergence of problems with understanding a particular message are known as communication barriers (Daud et al., 2017). Employees who aren't satisfied with their work environment's communication will start to question their own skills and, eventually, the company's (Page, 2021). Employees that are unable to express themselves effectively at work may have feelings of being undervalued, disengaged, and hesitant to go the extra mile to innovate inside the organization (Jacobson, 2023). Employees and workers are the lifeblood of any company or organization, vital to its survival and success, thus this is no small matter. A more communicative and cooperative work environment can only be achieved by identifying and removing these obstacles to communication. Organizations can overcome these obstacles by implementing focused strategies and interventions when they have identified and understood them. Improving cooperation, employee engagement, and organizational performance can be achieved by removing obstacles to communication and promoting an environment of open and productive dialogue. Concerns Pertaining to Focus Area In a complex work environment, a lack of communication can have far-reaching effects. But it's common to see people brush off the problem of workplace communication hurdles because they don't think it affected them much—which is obviously not the case. In order to grasp the gravity of these obstacles, one must examine actual problems that have developed due to poor communication. During the COVID-19 pandemic, when all employees were required to work remotely or from home in order to decrease the risk of viral transmission through face-to-face interaction, the effects of communication barriers in the workplace may have been most noticeable in recent years. According to the COVID-19 Epidemic Employee Pulse survey report (2020) from professional service business Aon Malaysia, which offers solutions in the areas of risk, health, and human capital, 74% of employees were able to work remotely throughout the MCO time. The results of the poll corroborated the claims made by Datuk Shamsudin Bardan, executive director of the Malaysian Employers Federation, who said that many businesses and employees were engaging in remote work and that productivity had fallen sharply during the Conditional MCO era. Reduced access to resources (49%), delays in response time and decision-making (42%), and the fact that some people find it difficult to communicate face-to-face are just a few of the reasons for the decrease in productivity that the survey outlined as limiting effective communication (Haroon, 2020). Additionally, a study on the topic of effective communication towards employee performance at Ladang Mados Mersing was carried out by Akwannadin & Isa (2021). An issue arises when most of the foreign laborers hired by Malaysia's plantation sector take their time acquiring our language. These workers come from a variety of ethnicities. Based only on scheduling and without providing a detailed explanation, some companies assume they have already given their staff a enough amount of information. Therefore, this study's results imply that unclear communication is a stronger factor affecting workers' productivity. Not to mention the low quality or outcome of the task due to employers and workers not communicating well. Among the many obstacles that foreign workers in Malaysia face is the difficulty of communicating effectively with their coworkers, which has a knock-on effect on their efficiency and output on the job. This is corroborated by the findings of Mohd Salleh et al. (2021)'s study titled "The Impact of Language Barriers and Discrimination Issues on Work Productivity of Foreign Workers." The study posits that workers' inability to communicate effectively in English or Malay, among other language barriers, puts them at a higher risk of injury on the job. The study's other results, including its highest variable result of 0.97, corroborated previous findings that miscommunication significantly reduced productivity on the job and may have contributed to a decline in company earnings. Concerning the matter of

misunderstandings, nevertheless, it appears that certain occupations or sectors put a premium on technical know-how, while communication qualities are either disregarded or given little weight. Consequently, employees might not put enough effort into developing their communication abilities. Workers, particularly those from other countries, are more vulnerable due to misunderstandings, according to research by Ne'Matullah et al. (2021). Workers without safety experience are more likely to sustain injuries while performing tasks that necessitate meticulous attention to detail, according to this theory. This is supposedly because there is a lack of comprehension and clear instructions. The following factors contribute to poor communication, according to the findings of a cross-sectional questionnaire survey by Olanrewaju et al. (2017) that involved 80 construction site workers: workplace stress, the attitudes of both superiors and colleagues towards site workers, workers' inadequate communication skills, and a lack of a shared language between employees and their bosses. Aside from the obvious effects on worker productivity, the construction industry in Malaysia is rife with problems related to poor communication, which in turn cause delays, overruns, poor quality, health and safety concerns, pollution, and sustainability concerns. 'Poor downward communication' is perceived as a serious concern by the respondents (different staff members of Takaful Operator based in Malaysia), according to another study on effective management communication (Harun et al., 2017). On the question, 56.2% of the employees picked "most significant" or "significant" as their answer. Individuals with conflicting objectives and a lack of understanding of corporate strategy are often the result of insufficient downward communication, the study found. Furthermore, lower-level staff members' lack of knowledge of upper-level management causes a lack of comprehension and dedication when making plans or having wide conversations about values. To add insult to injury, 46.6% of workers voiced their displeasure with "poor upward communication," the absence of which hinders senior teams' ability to grow as leaders through the sharing of constructive criticism. Despite the prevalence of these problems, many people, particularly in the business world, fail to see the range of effects that can result from ineffective communication. Making people aware of these obstacles and fostering a culture that does the same is of the utmost importance. In addition, studies addressing this topic are few, especially in Malaysia. In order to understand the cultural, linguistic, and organizational aspects that lead to ineffective communication, it is necessary to investigate the obstacles to communication. It may also provide light on the challenges faced by companies and help in finding strategies tailored to the specific situation to overcome such challenges. Therefore, it is crucial to learn, via an independent study, what obstacles to successful communication are and how they affect workers' productivity, teamwork, and overall effectiveness on the job.

Therefore, the objective of this study is twofold: first, to uncover the underlying reasons behind communicative silence in engineering English classrooms; and second, to propose practical, student-centric interventions that promote a shift from passive reception to active verbal engagement. Drawing from postmethod pedagogy, communicative language teaching, and affective domain theories, this study explores innovative methods such as peer-led speaking tasks, theatre-based role play, mobile-assisted language learning, and gender-sensitive pedagogical reforms [10,11]. The ultimate goal is to create an inclusive, low-anxiety, and interaction-rich learning environment where students feel empowered to express themselves, thereby moving from “silence to speech” and developing the oral proficiency required for their academic and professional success.

2. Objectives of the Study

1. To identify key factors contributing to silence in engineering English classes.
2. To design and implement a student-centric intervention model focused on oral engagement.
3. To evaluate the effectiveness of the model in improving students’ speaking participation and confidence.

3. Literature Review

Kaur (2017) [12], in her study Enhancing Speaking Skills in Indian Engineering Classrooms, investigates the persistent reluctance among engineering students in North India—particularly in Punjab and Haryana—to engage in spoken English activities, despite being aware of the significance of communication skills for their academic and professional futures. Through qualitative surveys and direct classroom observations, Kaur identifies that the traditional lecture-dominated teaching methods and the exam-oriented educational environment contribute significantly to a culture of silence. Students are habituated to passive learning, where teacher talk dominates and student interaction is minimal. Anchoring her analysis in Postmethod Pedagogy, as proposed by Kumaravadivelu, she critiques the overemphasis on grammar translation methods and rote memorization in English language instruction. Kaur argues that this rigid approach fails to create opportunities for students to take linguistic risks or practice real-life communication. She advocates for a shift toward context-responsive speaking modules that integrate role-plays, peer group discussions, and audio-visual aids, which not only foster engagement but also reduce language anxiety. The study concludes that to break the communication barrier in engineering classrooms, teachers must be willing to redefine their roles—not just as instructors but as facilitators of dialogue—who empower learners to find their voice through participation and experiential learning. **Sharma (2019)[13],,** in her research titled Overcoming English-Speaking Anxiety among Indian ESL Learners, explores the psychological barriers that inhibit oral communication among engineering students, particularly those from rural areas or Hindi-medium educational backgrounds. Through psycholinguistic surveys conducted across institutions in the Delhi NCR region, Sharma identifies a strong correlation between speaking anxiety and students' fear of peer judgment, coupled with negative experiences related to past language use. Drawing on Krashen's Affective Filter Hypothesis, the study argues that emotional factors such as stress, embarrassment, and a sense of inferiority raise students' affective filters, thereby obstructing the natural acquisition of spoken language. Sharma emphasizes that the issue is not rooted in linguistic incompetence but in the hostile or overly formal classroom environments that discourage risk-taking. To mitigate these barriers, she recommends creating low-anxiety learning contexts that include informal speaking corners, the use of voice-recording apps for self-assessment, and individualized feedback that is non-threatening. Her findings affirm that when emotional blocks are addressed and the fear of failure is minimized, students show significant improvement in both fluency and confidence. Sharma's study thus highlights the need to humanize language learning environments to unlock students' communicative potential. **Verma and Rani (2020)[14],,** in their study Peer Interaction and Oral Skill Development in Technical Institutes, examine the impact of structured peer-based speaking tasks on the oral proficiency of engineering students in Delhi. Through a semester-long intervention across three technical colleges, the researchers implemented communicative activities such as pair-work interviews, role-based dialogues, and group discussions aimed at fostering interaction among peers rather than relying solely on teacher-led instruction. Grounded in the principles of Communicative Language Teaching (CLT), the study highlights that students are more inclined to speak when communication is authentic, purposeful, and directed toward their classmates rather than authority figures. Verma and Rani found that peer interaction not only reduces language anxiety but also builds confidence, particularly for introverted and lower-proficiency learners who often hesitate to speak in formal classroom settings. The use of scaffolding techniques—where stronger peers support weaker ones—proved to be effective in promoting learner autonomy and risk-taking in speech. The study concludes that integrating student-centered, peer-supported activities into technical education enhances both willingness to communicate and overall oral fluency, offering a practical model to break the silence often seen in engineering English classrooms. **Gupta (2018)[15],,** in her study Classroom Silence and Gender in Technical Education, investigates the influence of gender dynamics on student participation in spoken English

activities within co-educational engineering colleges in Delhi and Noida. Through qualitative data gathered from interviews and focus group discussions, Gupta reveals that female students, particularly those from conservative family backgrounds, often experience heightened discomfort during mixed-gender communication tasks. This discomfort stems from deeply embedded cultural expectations, fear of ridicule, and the internalization of gendered communication norms that discourage assertiveness in public speaking. Anchored in the framework of Feminist Pedagogy, the study challenges the assumption that pedagogical practices are inherently neutral. Gupta critiques mainstream teaching models for overlooking gender-specific barriers to participation and calls for targeted interventions that validate and empower female voices in academic spaces. She proposes the creation of safe discussion groups, female-led speaking forums, and narrative-based assignments that allow women to express themselves without fear of judgment. The study concludes that addressing classroom silence in technical education requires an intersectional and feminist approach that goes beyond curriculum design to confront the cultural and social constructs that silence female students. **Rao (2021)[16],,** in the study titled Mobile-Assisted Language Learning for Oral Skills in Engineering Students, explores the transformative role of mobile technology in enhancing English speaking proficiency among engineering undergraduates in a Delhi-based institution. Over a 12-week intervention, students were encouraged to use voice-based mobile applications such as HelloTalk and Google Recorder to record their speech, engage in asynchronous peer feedback, and reflect on their pronunciation and fluency over time. Grounded in the Multiliteracies Framework**,** Rao's research underscores how digital tools expand the modes of communication beyond traditional text and speech, allowing for a more personalized and multimodal learning experience. The study finds that students who practiced speaking through these apps, outside the constraints of the formal classroom environment, demonstrated notable gains in confidence and fluency. Importantly, the use of technology reduced the fear of immediate peer or teacher judgment, making language learning more autonomous and less anxiety-inducing. Rao concludes that mobile-assisted language learning platforms can act as powerful supplements to classroom instruction, particularly in technical education contexts where students often lack regular opportunities for oral practice.

Bansal (2020)[17],, in the research titled Role of Self-Efficacy in English Speaking Performance of Engineering Students, explores the psychological construct of self-efficacy and its influence on students' oral communication abilities in technical education settings. Drawing upon Bandura's Social Cognitive Theory, the study surveyed 200 engineering students from various institutes in Delhi to assess how their confidence in their language abilities shaped their willingness to participate in spoken English tasks. The findings reveal a strong positive correlation between high self-efficacy and active classroom engagement—students who believed in their capacity to succeed were more inclined to take part in presentations, discussions, and impromptu speaking activities. Bansal emphasizes that speaking proficiency is not merely a matter of linguistic competence but is closely tied to learners' self-perception and motivation. To enhance oral participation, the study advocates for pedagogical strategies like success modeling—where students observe peers performing well, progressive goal-setting to build incremental achievements, and self-reflective exercises that reinforce a sense of progress. Ultimately, Bansal concludes that nurturing self-efficacy among learners is key to breaking classroom silence and promoting sustained oral language development. **Sen (2016)[18],,** in his study titled Non-verbal Participation and the Hidden Curriculum in ESL Classrooms, investigates the often-overlooked role of silent yet cognitively active students in English-speaking classrooms within a Delhi-based engineering institute. Using classroom ethnography, Sen observes that many students, despite their apparent verbal silence, remain deeply engaged through non-verbal behaviors such as attentive note-taking, eye contact, facial expressions, and internal mental rehearsal of language. Anchored in Hidden Curriculum Theory, the study challenges the dominant narrative that equates active learning solely with verbal expression. Sen argues that the

traditional classroom, shaped by implicit norms and unspoken expectations, privileges outward verbal participation while marginalizing learners who process language differently. These hidden curricular expectations often stem from hierarchical teacher-student dynamics and narrow evaluation systems that fail to capture diverse modes of engagement. To create more inclusive communication environments, Sen calls for pedagogical and assessment reforms that acknowledge and validate non-verbal participation, such as reflective journals, visual responses, and multimodal presentations. His work emphasizes that recognizing cognitive presence beyond speech is essential for fostering equity and participation in technical ESL settings.

Malhotra (2022)[19],, in the study titled Transforming Speaking Anxiety through Theatre-Based ESL Activities, explores the effectiveness of integrating drama techniques into English language instruction to reduce communication anxiety among engineering students. Conducted as an action research project in a technical college in Faridabad, the intervention included activities such as monologues, improvisational skits, and role-plays. Drawing on Dramaturgical Learning Theory, Malhotra argues that the performative element of drama provides students with a psychological buffer—what she terms "creative distance"—which allows them to step into roles and express themselves without the fear of personal judgment. This safe, imaginative space serves as a rehearsal ground for real-life communication, enabling students to build fluency, confidence, and spontaneity in a non-threatening environment. The findings demonstrate that such theatre-based activities not only minimize stage fear but also encourage risk-taking and emotional engagement with language. Malhotra concludes that incorporating creative arts into technical ESL curricula can play a vital role in breaking the communication barrier, particularly for learners who struggle with conventional speaking tasks. Her study advocates for a broader, more expressive pedagogy that acknowledges the power of embodied learning in language acquisition. **Shukla (2018)[20],** in the study Language Ideology and Silence in Multilingual Engineering Classrooms, critically examines how institutional language norms within English-medium engineering colleges in Delhi contribute to classroom silence among non-English-dominant students. Grounded in **Language Ideology Theory**, Shukla explores how the implicit privileging of English as the sole medium of valid academic expression alienates students who are more proficient in regional languages such as Hindi or Punjabi. Through extensive classroom observations and informal interviews, the study reveals that many students, despite having valuable ideas, choose to remain silent due to the fear of being perceived as “non-fluent” or linguistically inferior. This internalized linguistic hierarchy, reinforced by teachers and peers alike, leads to a suppression of intellectual contributions and perpetuates disengagement. Shukla critiques the monolingual orientation of English-medium instruction and advocates for **translanguaging strategies**, which allow students to think, process, and even initially respond in their native languages before translating ideas into English. This multilingual scaffolding approach validates students’ existing linguistic resources and empowers them to participate more freely in classroom discussions. Shukla concludes that recognizing and integrating linguistic diversity within ESL pedagogy can help dismantle the ideology of English supremacy and foster more inclusive, participatory classroom cultures. **Joshi (2017)[21],** in the study Classroom Interaction Patterns and Oral Proficiency in Engineering Students, investigates the structure and dynamics of spoken interaction in ESL classrooms within engineering colleges in Delhi. Applying the Interaction Hypothesis proposed by Long (1996), which emphasizes the role of meaningful interaction in second language acquisition, Joshi utilizes interaction analysis matrices to quantitatively assess classroom discourse. The findings reveal that teacher talk dominated approximately 80% of class time, with most student contributions limited to brief or monosyllabic replies. Teachers often initiated questions but failed to encourage elaboration or dialogic follow-up, thereby missing opportunities to foster deeper linguistic engagement. Joshi argues that such asymmetrical interaction patterns hinder students from developing oral fluency, as they are not exposed to

authentic or sustained speaking practice. To address this imbalance, the study recommends incorporating student-led presentations, structured Q&A segments, and peer interviews as part of the regular classroom routine. These interactive formats can democratize classroom discourse, reduce dependence on teacher initiation, and offer students the necessary exposure to spontaneous language use. Ultimately, Joshi concludes that recalibrating classroom interaction to prioritize student agency and authentic communication is essential for enhancing oral proficiency in technical ESL settings.

4. Methodology

Research Design: A mixed-method approach was employed with quantitative pre- and post-intervention assessments and qualitative data from classroom observations and student interviews.

Sample: 120 second-year engineering students from three colleges in Delhi participated (ages 19–21). The cohort included students from both English and non-English medium schools.

Intervention Design

The 6-week intervention included:

- Icebreaker activities to reduce speech anxiety.
- Pair and group tasks (role-plays, debates, storytelling).
- Use of mobile voice-recording apps for self-reflection.
- Weekly speaking clubs with peer feedback.
- Motivation sessions addressing fear of judgment.

5. Findings and Analysis

Objective 1: Identifying Key Factors Contributing to Silence in Engineering English Classes

The findings from the pre-intervention phase of the study offer a detailed and layered understanding of the underlying causes of silence in engineering English classrooms. The quantitative data, gathered through pre-intervention surveys, indicate that speech anxiety is the most dominant factor, with 78% of students acknowledging it as a significant barrier. This anxiety was more pronounced among students from non-English medium educational backgrounds, who reported heightened levels of discomfort when asked to speak in English. Their hesitation was largely attributed to the fear of making grammatical errors, mispronunciations, and the perceived risk of embarrassment in front of peers. These students often internalized the belief that their spoken English would be judged harshly, leading to a cycle of silence and self-doubt.

Moreover, 65% of the participants cited fear of peer judgment as a major obstacle. This fear was not unfounded, as the classroom culture observed in these settings emphasized correctness and rarely tolerated mistakes as learning opportunities. Such environments inadvertently fostered a performance-oriented mindset, where speaking was seen as a test rather than a communication tool. Lack of vocabulary, reported by 58% of students, further compounded the issue, making students feel inadequately equipped to construct coherent or expressive responses during discussions. This lexical limitation, rather than actual communicative incapacity, led many to withdraw from active participation. Qualitative insights obtained through student interviews and classroom observations provided a deeper context to these statistical findings. Classrooms were largely characterized by traditional, teacher-centric pedagogies, with minimal opportunities for student interaction or spontaneous dialogue. Teachers dominated the discourse, and speaking tasks—if present—were often limited to reading aloud or answering factual questions. Students repeatedly described the classroom environment as “rigid, formal, and intimidating,” devoid of warmth or encouragement. Such an atmosphere created a sense of alienation and reinforced passive learning behaviors. Significantly, more than 70% of students admitted that their silence was rooted in a lack of self-confidence rather than an unwillingness to participate or a disinterest in language learning. This self-perceived inadequacy was often tied to previous academic

experiences where oral skills were either ignored or penalized. In many cases, students had never been given structured or supportive platforms to develop their spoken English, leading to a persistent internal belief that speaking in English was beyond their capacity. From an analytical standpoint, these findings strongly align with existing theories of affective barriers in second-language acquisition, particularly in non-humanities and technical educational settings. Scholars have long emphasized that language learning is not just a cognitive process but an emotional one, where factors such as anxiety, motivation, self-esteem, and classroom dynamics play crucial roles. In this case, student silence was not merely a behavioral trait or cultural norm, but the result of cumulative linguistic insecurity, pedagogical rigidity, and socio-educational conditioning.

Thus, the study underscores the critical need to reframe classroom silence not as a disciplinary challenge but as a sign of emotional vulnerability and pedagogical misalignment. Addressing this silence requires not only language scaffolding but also emotional scaffolding, wherein students feel safe, supported, and valued for their effort, not just their accuracy. These insights serve as a foundational rationale for the intervention phase, which sought to break this silence by fostering communicative confidence, emotional resilience, and a more inclusive classroom culture.

Objective 2: Designing and Implementing a Student-Centric Intervention Model

The six-week intervention was strategically designed to address the specific emotional, psychological, and linguistic barriers that had been identified during the pre-intervention phase. Each week introduced a new layer of engagement, progressing from reducing inhibition to promoting expressive and collaborative speaking. In **Week 1,** the focus was on icebreaking activities like "Two Truths and a Lie" and group-based name games. These informal, playful exercises significantly reduced initial speech anxiety and helped students overcome the tension associated with speaking in front of peers. Reflections collected after these sessions indicated a 42% increase in willingness to speak in small groups, showcasing the power of low-stakes interaction in easing students into verbal participation. Building on this momentum, **Weeks 2 and 3** introduced creative speaking activities such as role-play and storytelling, which encouraged students to step into imagined contexts and articulate their thoughts without the fear of being "correct" or "perfect." These tasks stimulated spontaneous dialogue, especially in peer-pair settings, where students were more willing to take linguistic risks. Classroom observations recorded a visible shift in participation patterns, with more students engaging actively and confidently, especially when the tasks involved collaborative imagination rather than factual recitation.

Week 4 shifted focus to structured debate sessions, which brought in critical thinking alongside verbal articulation. Initially, participation was dominated by English-medium students; however, as the week progressed, even hesitant speakers began to engage, driven by group dynamics and a clearer structure for presenting opinions. The debates functioned as powerful tools not only for language development but also for cultivating logical reasoning and argument framing—essential skills in academic and professional discourse.

In **Week 5,** the integration of mobile voice-recording apps added a technological layer to the intervention. This tool enabled students to record, playback, and self-assess their spoken English in a private setting. For many students, it was the first time they had heard themselves speak in English, which was both a reflective and motivating experience. The opportunity to rehearse and refine their speech in a non-judgmental space contributed significantly to reducing real-time speaking anxiety and fostering self-correction habits.

Finally, **Week 6** introduced speaking clubs, where students provided peer-to-peer feedback in an informal, supportive environment. These clubs served as a safe forum for students to experiment with language, discuss diverse topics, and receive encouragement from classmates rather than only from instructors. Feedback from students revealed that over 70% felt more comfortable and confident in expressing opinions publicly by the end of the program.

The analysis of this phased, student-centric model reveals its strength in dismantling the rigid, top-down dynamics that often characterize technical English classrooms. By progressively layering activities that engaged both cognitive (language use, reasoning) and affective (confidence, motivation) domains, the intervention created a holistic developmental experience. This aligns with Vygotsky's sociocultural theory, which emphasizes the importance of social interaction and scaffolding in language acquisition. Moreover, the incorporation of technology as a private, self-directed tool enabled students to gain fluency without the pressure of public performance. In sum, the intervention's success lay in its ability to balance structure and creativity, individual reflection and group collaboration, emotional safety and intellectual challenge—effectively transforming the classroom into a space where students felt empowered to find and use their voices.

Objective 3: Evaluating the Effectiveness of the Model

The post-intervention phase of the study revealed statistically and pedagogically significant improvements in both students' speaking confidence and their classroom participation. Quantitative assessments demonstrated a marked enhancement in self-rated speaking confidence, with average scores on a 5-point Likert scale rising from 2.1 before the intervention to 4.0 afterward, indicating a major shift in students' perception of their own communicative abilities. This increase was not only numerical but reflected a profound psychological transformation, as students began to see themselves as capable and competent English speakers. Additionally, classroom participation frequency nearly doubled, as documented through systematic observation checklists. Where students had previously remained silent or hesitant, there was now a visible eagerness to contribute, engage in discussions, and take initiative during speaking tasks. The intervention's impact extended beyond statistics to qualitative indicators of personal growth. Interviews conducted with participants revealed that 84% felt more confident initiating conversations in English, both in academic and informal settings. Many students emphasized that the fear of judgment and anxiety around public speaking had significantly reduced. One student notably remarked, "Earlier, I avoided eye contact with the teacher. Now I enjoy presenting my views in front of the class." Such testimonials underscore the emotional and attitudinal shifts brought about by the intervention, which went far beyond linguistic competence to influence self-perception and interpersonal behavior. Furthermore, feedback from instructors offered an external validation of this shift. Teachers reported a tangible change in classroom dynamics, noting that students who were once passive observers were now actively volunteering for oral tasks and leading group discussions. This behavioral change signifies a deeper transformation in student engagement, ownership of learning, and classroom identity, pointing to the success of the intervention in fostering a culture of participation and mutual respect.

The analysis of these outcomes suggests that the true strength of the intervention lies in its holistic, student-centered design. By addressing both linguistic development and emotional well-being, the program dismantled the dual barriers of language insecurity and fear of public failure. Its inclusive, phased approach created multiple entry points for students with varying levels of proficiency, ensuring that no learner was left behind. The consistency of positive outcomes across a diverse cohort of students—from different linguistic, socio-economic, and educational backgrounds—further reinforces the adaptability and scalability of this model.

6. Discussion

The findings of this study bring to the forefront a critical yet frequently underestimated issue in engineering English classrooms: the persistent silence among students is not a reflection of linguistic incompetence or apathy, but rather a manifestation of deep-rooted emotional, psychological, social, and instructional barriers. This silence often stems from invisible emotional hurdles—such as anxiety, low self-esteem, and learned helplessness—that accumulate over years of traditional education where speaking skills were neither nurtured nor valued, especially for students from non-English medium backgrounds. The intervention illuminated the multi-dimensional nature of classroom silence. It became evident that

students were not simply "shy" or "passive"; instead, they were constrained by a classroom culture that placed undue emphasis on grammatical precision and correctness. The constant fear of making errors in front of peers and teachers had led to a learned pattern of verbal withdrawal. This fear was especially intense among students whose academic identity had previously been tied to written performance and rote memorization—systems that often exclude oral proficiency development. By reorienting the classroom approach from 'accuracy-first' to 'communication-first', the intervention strategically disrupted these inhibitive patterns. This pedagogical shift encouraged students to prioritize meaning-making, risk-taking, and self-expression. For the first time, many students began to view spoken English as a tool for conveying ideas rather than a minefield of errors waiting to expose their inadequacies. This subtle yet powerful transition played a pivotal role in dismantling psychological barriers and fostering a growth mindset around oral communication. The program's informal, context-rich speaking tasks were central to this transformation. Unlike traditional oral presentations, which often pressure students to perform flawlessly, activities like role-playing real-life scenarios, structured debates, storytelling, and peer interviews created an environment where communication was both authentic and accessible. These tasks provided learners with a safe rehearsal space where experimentation was encouraged and errors were reframed as learning opportunities. The peer-led speaking clubs further nurtured an atmosphere of solidarity and mutual growth. Here, students who were once silent observers emerged as active contributors, drawing confidence from the normalization of linguistic struggle shared by their classmates.

The incorporation of technology-based self-reflection tools, particularly mobile voice-recording apps, played an equally transformative role. These tools allowed students to record their voices, listen critically to their articulation, and make improvements—all in private, without the immediate scrutiny of others. This private rehearsal phase enabled students to build metacognitive awareness of their language use, develop ownership over their learning process, and reduce the fear of spontaneous speaking. For many, hearing their voice in English for the first time became a powerful moment of self-recognition and validation. Crucially, the motivational sessions focused on deconstructing fear offered a psychological scaffold that supported students emotionally. These sessions underscored the fact that the fear of speaking is a shared and manageable challenge. Students were encouraged to name their fears, discuss them in small groups, and reflect on their sources—be it past ridicule, cultural norms, or internalized self-doubt. This deliberate acknowledgment of fear as a legitimate affective barrier shifted the emotional atmosphere of the classroom from silence borne out of shame to speech born out of self-acceptance and collective empathy. Another cornerstone of the program's effectiveness was the transformation of the teacher's role. Traditionally perceived as the sole authority and assessor, the teacher in this model stepped into the role of a co-learner, facilitator, and motivator. This relational shift broke down the vertical hierarchies typically found in Indian engineering classrooms. Students no longer feared being corrected harshly or publicly; instead, they experienced affirmation, constructive feedback, and encouragement. This shift enabled the development of a more democratic, emotionally safe, and dialogic classroom culture, essential for sustained engagement and risk-taking in speaking tasks. Finally, the intervention revealed that cultural and linguistic diversity, once seen as a hindrance in a monolingual English class, could be reimagined as a strength. Students from varied linguistic backgrounds brought rich experiences, idioms, and narrative traditions into the classroom when given the space to do so. Rather than suppressing their linguistic identities, the program allowed them to integrate their personal stories into speaking tasks, which humanized classroom communication and bridged the gap between academic language and lived experience.

7. Conclusion

A deep shift in the philosophy of language teaching and student-teacher dialogue is required if engineering English classes are to break the silence, which will require more than just

cosmetic changes to the curriculum. Silence is not a weakness but rather an indicator of more systemic problems, such as a lack of psychological safety, an unhealthy fixation on being right rather than being communicative, and a deeply ingrained fear of being judged. Teachers need to make an effort to foster an atmosphere of empathy, inclusivity, and trust if they want their pupils to break the quiet and speak up. The key is to see pupils for who they really are: dynamic beings with their own linguistic history, emotional struggles, and communicative aspirations, rather than just a source of language to be taught. Deconstructing the stigma surrounding making mistakes and instead establishing a classroom culture that celebrates and encourages risk-taking in language is essential for reducing linguistic uneasiness. Instead of focusing on memorization of dialogues or rote speaking drills, teachers should emphasize authentic communication in which students share their own ideas, opinions, and experiences. Additionally, the job of the educator needs to change from that of a critical critic to that of a caring guide who can help pupils overcome their anxieties and doubts. Students start to find their voices when classrooms transform into places that foster vulnerability and respect speaking as a human connection instead of a language exam. In addition to being necessary for language competence, this change is necessary for producing engineers who are self-assured, eloquent, and socially empowered and who can work well in a variety of professional settings. In the end, speaking up is about more than just being better at English; it's about realizing your potential.

8. Recommendations of the Study

1. Add oral fluency modules to engineering semesters.
2. Educate faculty on effective communication techniques.
3. Create peer-led speaking clubs and language labs.
4. Utilize digital tools for feedback and reflection.
5. Include group debates, presentations, and role-plays in technical courses to promote academic language use.
6. Senior students can coach juniors in spoken English with lessons, models, and feedback.

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