



## ENGINEERING UNDERGRADUATES VERBAL DILEMMA: EXAMINING THE INFLUENCE OF TEST ANXIETY BEFORE, DURING AND AFTER ENGLISH LANGUAGE SPEAKING ASSESSMENT

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### Abstract —

This study explores how affective filters, defined by linguist Stephen Krashen as unseen psychological barriers that either facilitate or impede language learning, influence the speaking abilities of engineering undergraduate students. Specifically, this paper delves into the role of "test anxiety" in classroom speaking assessment in English language. The study employs the Achievement Emotions Questionnaire assessing eight test-related emotions, which are enjoyment, hope, pride, relief, anger, anxiety, shame, and hopelessness. A representative sample of 150 freshman engineering students took 3-fold tests that is; before, during and after the English-speaking test recorded their responses on a 5-point Likert scale, 1 being strongly disagree and 5 being strongly agree. A descriptive analysis of this extensive 3-fold investigation offers valuable insights into the emotional states that students go through. The findings revealed high levels of test anxiety and its correlation with speech inhibition. There is a strong presence of worry, nervousness, and anxiousness before the speaking test. The physiological manifestations of the test anxiety like shaky hands, increased pulse is seen during the speaking test. There is a great relief, release from stress of the speaking test and the built-up tension dissipates after the test is over. This paper contributes to a nuanced understanding of language learning challenges and provides a comprehensive understanding for English language teachers that a student's learning experience is three dimensional and all perspectives must be taken into consideration to design apt interventions to reduce test anxiety and enhance speaking skills in the classroom.

**Keywords** - affective filter; speaking ability; test anxiety

### I. INTRODUCTION

Apart from technical knowledge, effective communication skills are consistently sought after by employers [1]. However, the observation reveals that speaking in English is a difficult challenge for many engineering students [2][3]. The reason is an unspoken barrier: test anxiety. [4]

Anxiety is an innate response to stress, as defined by the World Health Organization (WHO) [5], commonly seen as apprehension or fear. American linguist by the name Stephen Krashen put forward the Input Hypothesis which explains how individuals acquire and develop proficiency in languages apart from their native tongue. [6] One such important concept under this theory is the Affective Filter

Hypothesis which states that affective filters, such as motivation, self-confidence, stress, and anxiety play a major role in facilitating or inhibiting the process of language learning. In other words, the emotional factors of language learners profoundly influence the effect of their acquisition [7]. Language learning is not merely a linguistic task but it is one that involves several psychological and emotional challenges. Surface-level linguistic approaches provide an incomplete understanding of a learner, and therefore teachers must closely examine the deeper psychological factors that make or break the language learning process [8]. Therefore, English teachers are tasked with identifying and implementing strategies to remove the affective filters that increase the level of proficiency in students.

Test anxiety comes with worry, fear of failure and stress, manifests before, during and after an exam [9]. While moderate levels act as motivators, excessive anxiety becomes detrimental, hindering learning [10][11]. This is particularly evident among engineering undergraduates, where a negative relationship exists between test anxiety and their speaking skills. This anxiety, caused by circumstantial factors like fear, self-doubt, and boredom, acts as a barrier, obstructing learning and leading to underperformance [12].

According to a study by Spielberger, students experiencing test anxiety undergo physiological changes triggered by the fight-or-flight response, including elevated heart rate, sweaty palms, trembling hands and legs, and rapid breathing. These changes are caused by the surge of adrenaline and cortisol, have adverse effects on concentration, memory, and test performance. [13]

Hence, understanding the 3-fold influence of test anxiety, i.e., before, during and after English language speaking tests becomes crucial. Such insights enable English teachers to design interventions that not only address exam preparation but also create a conducive testing environment to reduce anxiety. By understanding the emotional state of their students, teachers recognise that language learning is a multidimensional process that extends beyond the four walls of the classroom and includes the psychological well-being of the student.

This study utilises the Achievement Emotions Questionnaire [14] to assess eight test-related emotions faced by students: enjoyment, hope, pride, relief, anger, anxiety, shame, and hopelessness. By examining the negative emotions across the three assessment stages of before, during and after, we aim to investigate the impact of test anxiety on speaking skills in engineering undergraduates. This questionnaire is administered to 150 freshman engineering students and descriptive analysis of their responses indicates the emotions associated with before, during and after English speaking test.

## II. REVIEW OF LITERATURE

Test anxiety is a well-documented phenomenon that hinders student performance, particularly in language learning contexts. This review of literature acknowledges the presence of test anxiety

and examines its detrimental effects on students' English-speaking abilities, drawing from various research studies conducted across different global contexts.

Meihua Liu [15], from Tsinghua University, China reported in her 2018 study that anxiousness played a major role in how well Chinese university students performed on an English-speaking test. It calls for a crucial awareness of the existence of anxiety.

The study by Rehman [16] revealed a negative relationship between test anxiety and academic achievement in 840 secondary level students from 30 schools in Lahore district of Pakistan and identified incorrect study habits such as cramming as the basic cause of test anxiety. Teaching of effective study habits was the intervention to curb it.

Amiri [17] revealed that certain emotional factors have a detrimental impact on student achievement. Anxiety was a major contributing factor to students' performance which included communicative anxiety, fear of negative evaluation, test anxiety and anxiety related to English classes.

Basbay [18] showed that test anxiety had the highest impact on English speaking abilities, whereas communication apprehension had the least adverse influence.

The review suggests potential solutions for reducing the negative effects of anxiety. Researchers propose various strategies, including pedagogical changes to reduce anxiety levels, the development of emotional intelligence in students, stress management techniques and the adoption of relaxation tools.

Researchers from Ling Tung University, Taichung, Taiwan [19] urged for pedagogical changes to relieve the anxiety level to improve oral performance. The study discussed the importance of anxiety coping measures to enable students to do their best in the speaking test.

A study by Yifan Liao [20] emphasised the need to adapt graduate programs curriculum and teaching practices to cater to the emotional needs of students to reduce the impact of foreign language anxiety.

Qiangfu Yu [21], pointed out that teaching healthy practices such as developing emotional intelligence to engineering students proved to be an effective intervention to curb negative emotions like anxiety.

Dahbi. M [22] investigated the impact of test anxiety on students' performance in English tests and suggested implementation of stress management techniques to reduce anxiety and increase confidence. Introduction of relaxation tools led to a shift in the attitude towards English tests, creating a more positive outlook. This was reflected in more students scoring average or above-average marks in the English test.

Rizkiya, A and Pratolo, B. W [23] identified several helpful measures to tackle speaking anxiety in their research such as preparation, relaxation, positive thinking, seeking peer support and exercise.

Tseng S. F [24] recommended exercise as a key relaxation technique for students burdened with foreign language anxiety as it turns nervous energy into positive energy through a calming release of chemicals.

By examining studies conducted by various scholars, this review explores the various facets of anxiety that negatively impact students' speaking abilities. It also gives a comprehensive review of solutions to minimize its impact.

### **III. RATIONALE OF THE STUDY**

This study aims to explore the negative emotions engineering undergraduates experience before, during, after an English-speaking. This investigation focused on 150 students enrolled in "Professional Communication," a course for freshman students at KLE Technological University. The goal is to understand the observed negative perception of English-speaking tests among these students, a perception that appears to hinder performance despite adequate preparation. This phenomenon aligns with the findings of Spielberger [25] and Alderson [26], who highlight test anxiety as a significant factor impacting speaking assessments.

By recognizing the emotional toll such speaking tests take on students, this study encourages English teachers to create a comfortable environment that allows students to perform at their best without excessive stress. An understanding of the students' emotional state throughout the testing process (before, during, and after), equips teachers to develop effective interventions to mitigate the negative effects of test anxiety.

### **IV. METHODOLOGY**

This research study was carried out in a 3-fold investigation of the English-speaking test: before, during and after. To understand the impact of negative emotions on engineering students' speaking skills, Achievement Emotions Questionnaire was used. The objective of the study was explained to the students and were instructed to give their honest responses.

"Professional Communication" is a course offered to freshman engineering students. As a part of this course, each student takes one assessment focused on speaking skills in English language called as "Individual Presentation." As a part of this assessment every student must speak on any topic of their choice for at least 6 minutes of time. The maximum time allotted for this assessment is 10 minutes. It is the part of the Internal Semester Assessment (ISA). The students were given the AEQ before they took the speaking assessment and were asked to record their responses. They were asked to reflect on their experience during the speaking assessment and

record their responses accordingly. They were once again given the AEQ after the speaking assessment and record their responses accordingly.

It has been observed by the teaching faculty that students exhibit anxiety levels before, during and after the English-speaking assessment. This research was carried to investigate the various factors causing the anxiety levels by administering them with the Achievement Emotions Questionnaire, where students record their responses on a five-point Likert scale, 1 being Strongly Disagree and 5 being Strongly Agree. For this study, five batches of 30 students were considered. On the day of administering the questionnaire, 150 freshman engineering students gave their responses, which were considered for the study.

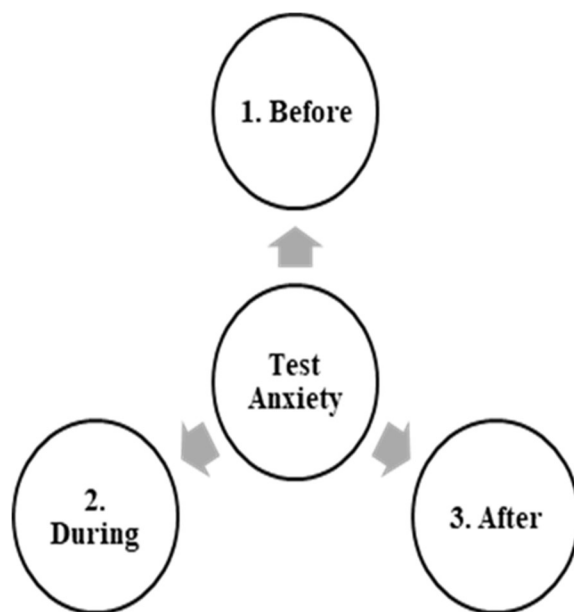


Figure 1. 3-Fold Investigation Model

TABLE I. RESEARCH DESIGN

<p>Stage 1</p>	<p>The AEQ is administered to the 150 freshman engineering students. The students were instructed to read the items pertaining to their emotions felt before an English-speaking test and mark their responses on a five-point Likert scale, 1 being strongly disagree and 5 being strongly agree.</p> <p>Following are the items in the AEQ pertaining to the negative emotions felt Before a Speaking Test:</p> <ol style="list-style-type: none"> <li>1. Before the exam I feel nervous and uneasy.</li> <li>2. I get so nervous I wish I could just skip the exam.</li> <li>3. I get angry over time pressures which don't leave enough time to prepare.</li> <li>4. I get angry about the amount of material I need to know.</li> <li>5. I worry whether I have studied enough.</li> </ol>
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Stage 2	<p>The AEQ is utilised to understand the emotional trajectory during the English-speaking test of 150 freshman engineering students. The students were instructed to read the items pertaining to their emotions during an English-speaking test and mark their responses on a five-point Likert scale, 1 being strongly disagree and 5 being strongly agree.</p> <p>Following are the items in the AEQ pertaining to the negative emotions felt During a Speaking Test:</p> <ol style="list-style-type: none"> <li>1. I feel like giving up.</li> <li>2. I get so nervous I can't wait for the exam to be over.</li> <li>3. I feel panicky when taking the exam.</li> <li>4. Because I am ashamed my pulse races.</li> <li>5. At the beginning of the test, my heart starts pounding.</li> <li>6. My hands get shaky.</li> <li>7. I am so anxious that I'd rather be anywhere else.</li> <li>8. I feel hopeless.</li> <li>9. I worry whether I will pass the exam.</li> </ol>
Stage 3	<p>The AEQ is utilised to understand the emotions felt after the English-speaking test of the 150 freshman engineering students. The students were instructed to read the items pertaining to their emotions felt after an English-speaking test and mark their responses on a five-point Likert scale, 1 being strongly disagree and 5 being strongly agree.</p> <p>Following are the items in the AEQ pertaining to the negative emotions felt After a Speaking Test:</p> <ol style="list-style-type: none"> <li>1. I feel freed.</li> <li>2. I feel relief.</li> <li>3. The tension in my stomach is dissipated.</li> <li>4. I can finally laugh again</li> </ol>

### A. Sample

This study investigated the impact of test anxiety by administering the AEQ on a representative sample of 150 freshman engineering students of KLE Technological University, Hubli. The students have completed their secondary level of education and are from varied backgrounds and are enrolled for the “Professional Communication” course.

### B. Instrument

Achievement Emotions Questionnaire (AEQ) by Pekrun et al. [14] was utilised to measure eight key emotions: enjoyment, hope, pride, relief, anger, anxiety, shame and hopelessness. Data was collected to assess the negative emotions in three stages of the speaking test: before, during and after. Descriptive analysis of the AEQ responses revealed valuable insights about the negative emotions experienced by students at each stage.

## V. DATA ANALYSIS

Descriptive analysis on the responses given by the students on the 3-fold tests was done to unveil their negative emotions before, during, and after the English-speaking tests. The frequency of on each item of the questionnaire was analysed. The frequency is the number of times the students demonstrated their strong agreement to the corresponding items of the questionnaire. The following analysis shows the frequency distribution as given below:

- A. Before English-speaking Test
- B. During English-speaking Test
- C. After English-speaking Test

**A. Before English Speaking Test**

**TABLE II. FREQUENCY DISTRIBUTION**

<b>Emotions of Students Before English Speaking Test</b>	<b>Percentage</b>
Before the exam I feel nervous and uneasy.	70%
I get so nervous I wish I could just skip the exam.	65%
I get angry over time pressures which don't leave enough time to prepare.	60%
I get angry about the amount of material I need to know.	55%
I worry whether I have studied enough.	51%

**Emotions of Students Before English Speaking Test**

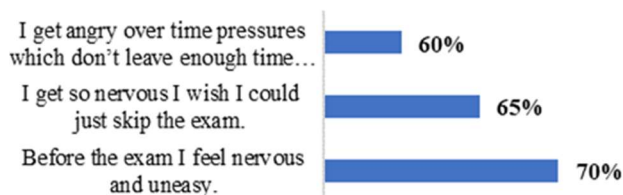


Table II indicates the emotional state of students before an English-speaking test, with 70% of students feeling nervous and uneasy before the exam, while 65% students feel so overwhelmed with nervousness that they wish to skip the test. Additionally, 60% report feeling anger due to time pressures affecting their preparation and 55% feel frustrated by the extensive material they need to cover. 51% students are worried about level of preparation.

**B. During English Speaking Test**

**TABLE III. FREQUENCY DISTRIBUTION**

<b>Emotions of Students During English Speaking Test</b>	<b>Percentage</b>
I feel like giving up.	80%
I get so nervous I can't wait for the exam to be over.	75%
I feel panicky when taking the exam.	72%
Because I am ashamed my pulse races.	68%
At the beginning of the test, my heart starts pounding.	61%
My hands get shaky.	58%

I am so anxious that I'd rather be anywhere else.	53%
I feel hopeless.	49%
I worry whether I will pass the exam.	47%

Emotions of Students During English Speaking Test

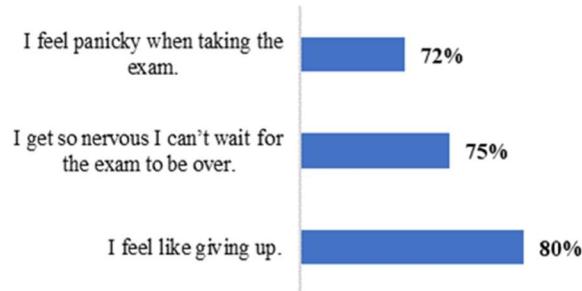


Table III outlines the emotions experienced by students during an English-speaking test, with 80% of students report feeling like giving up during the test. 75% anticipate the end of the test due to the overwhelming nervousness while 72% feel panicky. Furthermore, 68% students feel ashamed, accompanied by a racing pulse, during the test. Physical manifestations of anxiety are also evident, with 61% experiencing a pounding heart at the beginning of the test and 58% reporting shaky hands while speaking. 53% students said they would rather be anywhere else due to their anxiety and 49% feel hopeless. Lastly, 47% worry about their ability to pass the test.

C. After English Speaking Test

TABLE IV. FREQUENCY DISTRIBUTION

Emotions of Students After English Speaking Test	Percentage
I feel freed.	99%
I feel relief.	95%
The tension in my stomach is dissipated.	92%
I can finally laugh again.	88%
I finally can breathe easy again.	75%

Emotions of Students After English Speaking Test

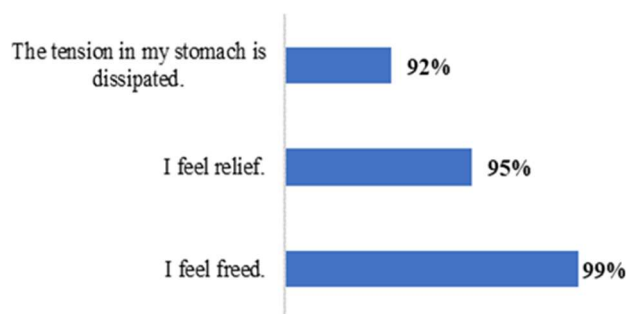




Table IV illustrates the emotional state of students after completing an English-speaking test, with 99% of students feeling freed, indicating a sense of release from the stress of the exam. 95% of students strongly express relief, another indication of reduction in anxiety. 92% describe a dissipation of the tension in their stomach, further emphasizing the alleviation of physical strain. 88% students shared they were able to laugh again and 75% express being able to breathe easy again.

The English-speaking test indeed proves to be a challenging task for engineering students and relief after the test prevails. This dramatic emotional journey calls for interventions to manage anxiety and support student well-being throughout the testing process.

## VII. RECOMMENDATIONS

1. English teachers must encourage students to plan their preparation well in advance before the speaking test to avoid the negative feelings of worry and anxiety.
2. A distraction free and non-judgmental environment during the test helps the students to cope with the panic and fear of failure and enables them to give their best.
3. Equip teachers with the skills to recognize and manage student anxiety while fostering a conducive test environment.
4. Follow-up with students who continue to face test anxiety and address underlying root causes after the speaking test.

## VI. DISCUSSION

**TABLE V. OVERALL FREQUENCY DISTRIBUTION**

Stage	Emotions
Before	Nervousness, Uneasiness, Anger, Frustration, Worry
During	Overwhelming Nervousness, Shame, Hopelessness, Wanting to Escape, Worry about Passing
After	Relief, Reduced Tension, Relaxation, Ease

Engineering students experience emotional turbulence before, during and after their English-speaking test. 70% students feel nervous and uneasy and 65% wishing to skip the test entirely. 60% students are plagued by time pressure and 55% feel angry due to the extensive material. Additionally, 51% worry about their preparedness, an indication of poor planning.

Test anxiety further shoots up during the English-speaking test and is characterized by 80% students feeling like giving up, 75% anticipating the end due to nervousness and 72% experiencing panic. 68% students report feeling ashamed and 61% physiological symptoms like a racing heart and 58% experience shaky hands. 53% students rather be elsewhere and 49% feel hopeless. 47% students are occupied by worry about passing the speaking test.

There is a paradigm shift in the emotions after the speaking test as 99% students expressed relief. 92% students felt dissipation of physiological symptoms and 75% said they can breathe easy. 88% students felt that they could finally laugh again.

## VIII. CONCLUSION

The analysis shows an alarming presence of negative emotions among engineering students before, during and after an English-speaking test. The emotional burden of stressful testing environments shows its impact on their well-being, confidence, motivation and overall speaking skills. By implementing the recommended interventions, English teachers empower students to manage their anxiety, navigate the testing process with comfort and do their best. The observed emotional shift post-test is a sign of adaptability, where teachers get an opportunity to connect with their students to understand their inhibitions.

In conclusion, tackling test anxiety is more than modulating the test environment and requires a three-dimensional approach that equips students with coping mechanisms with a greater sense of awareness. Such practices prioritize learning over marks and help students to not fear the speaking test, but also enjoy the process.

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