

# Employing CEFR Speaking Rubrics to Paul-Elder Critical Thinking Framework to Assess Undergraduate Level Students Speaking Skills

M Raju<sup>1</sup>, Lavanya Sivapurapu<sup>2</sup>, Mrunalini Sasanka B<sup>3</sup>, Thirupathi Thumma<sup>4</sup>

<sup>1</sup>Department of English, B V Raju Institute of Technology, Narsapur, Medak, 502313, Telangana State, India.

<sup>2</sup>Department of English, K L E F (Koneru Laxmaiah Educational Foundation)

Deemed to be University, Vaddeswaram, Guntur, A.P, India,

<sup>3</sup>Department of Computer Science and Engineering, Vardhaman College of Engineering, Shamshabad, Ranga Reddy, 501218, Telangana State, India.

<sup>1</sup>madugularaju83@gmail.com ,

<sup>2</sup>drlavanyasivapurapu@gmail.com

<sup>3</sup>mrunalini.b@bvrit.ac.in,

<sup>4</sup>thirupathi.thumma@gmail.com

**Abstract:** The primary objective of the current research is to improve the speaking skills of undergraduate students by employing the Paul-Elder Critical Thinking Framework (PECTF). Initially, a pre-test was conducted on 61 undergraduate students, following a random speaking test administered to 116 students at a traditional undergraduate college offering conventional courses such as B.A., B.Com., and B.Sc. The pre-test scores were evaluated using the Common European Framework of Reference for Languages (CEFR) speaking descriptors. Students scoring at the A1 level or below were selected for participation in a 6-month Intervention Programme (IP) centered around PECTF. Subsequently, a post-test was conducted, and the recordings were analyzed using the adopted CEFR speaking rubrics. The study revealed significant improvements in speaking skills when comparing the meticulously analyzed results of both pre and post-tests. A qualitative analysis method was extensively utilized in this research. The findings suggest that PECTF can effectively enhance speaking

skills, positioning it as a valuable teaching tool for language development, particularly in the context of speaking skills. The researcher sought to explore innovative paradigms and approaches to enhancing speaking skills through the utilization of PECTF.

**Keywords:** CEFR, Enhancement, Paul-Elder Critical Thinking Framework, Speaking Skills, Undergraduate.

## 1. Introduction

The Paul tradition, or Paulian critical thinking, was formulated by Dr. Richard William Paul, who is widely considered for his well-reasoned and fair-minded critical thinking in the world of critical thinking. Paulian critical thinking attempts to state the minimal conditions for an adequate theory of critical thinking and then build upon those conditions. Paul tried to attempt to combine and amalgamate a new framework of virtually self-evident truths, concepts, and theories about critical thinking and various hindrances to it. Paul argued that the primary task of the logician is to develop tools for the analysis and assessment of reasoning in every discipline and domain of every thought, tools to be used in reasoning through life's many complex problems and issues. He emphasized the importance of the "logic of language" to human reasoning. He set forth the notion that every subject and discipline had a fundamental logic that could and should be explicitly formulated and that an

**Lavanya Sivapurapu**

Department of English, K L E F

(Koneru Laxmaiah Educational Foundation)-

Deemed to be University, Vaddeswaram, Guntur, A.P, India,

drlavanyasivapurapu@gmail.com

adequate theory of reasoning would provide the foundation.

1.1 Paulian critical thinking included such premises as:

1. It is our natural tendency to think (that thinking spreads to every aspect of human life and every dimension of the human mind).
2. Although it is a human tendency to think, it is not very natural for humans to think well (human nature is heavily influenced by prejudice, illusion, mythology, ignorance, and self-deception).
3. Therefore, we need to be able to intervene in thinking, analyze, assess, and, where necessary, improve it.

In contemplating and formulating his concept of critical thinking, Paul came to recognize that there are intellectual abilities that cannot be completely separated from intellectual traits in the mind of the critical thinker. For example, thinkers who can enter emphatically into viewpoints with which they disagree, accurately representing those viewpoints and crediting them for their insights, have a certain level of intellectual command that people who cannot do this lack. People who regularly enter alternative and opposing viewpoints to understand them (Intellectual Empathy), distinguish what they know from what they don't know (Intellectual Humility), think for themselves while adhering to rigorous standards for thought (Intellectual Autonomy), can be moved by reasoning that is better than their reasoning (confidence in reason), and so forth, are better at reasoning through problems and issues than those who lack these dispositions. In short, they are better at critical thinking.

Paul emphasizes the unconscious intrinsic forces in the mind that naturally impede critical thinking development, including egocentricity and socio-centric. Paul's emphasis on the logic of questions was influenced by John Wisdom's approach to questions.

## 1.2 Paul-Elder Critical Thinking Framework

Critical thinking is a mode of thinking about any subject, content, or problem in which the thinker improves the quality of his or her thinking by taking charge of the structures inherent in thinking and imposing intellectual standards upon them. (Paul and

Elder, 2001). In 2001, Paul and Elder introduced the Critical thinking framework that helps students master their dimensions by identifying the thinking parts and evaluating the usage of these parts. The framework aims to add improving our reasoning by identifying its different elements through three main elements. The Paul-Elder Critical Thinking Framework has three basic components.

1. The Elements of Thought (Reasoning)
2. The Intellectual Standards that should be applied to the elements of reasoning
3. The Intellectual Traits associated with a cultivated critical thinker result from the consistent and disciplined application of intellectual standards to the elements of the thought

According to Paul and Elder (1997), there are two essential dimensions of thinking that students need to master to learn how to upgrade their thinking abilities. They need to be able to identify the parts of the thinking, and they need to be able to assess very meticulously their use of parts of thinking

## 1.3. Speaking skills

The Oxford Dictionary of Current English (2009) defines speaking as the action of conveying information or expressing one's thoughts and feelings in spoken language (p. 414). Chaney (1998), however, thought of speaking as a process: speaking is the process of building and sharing meanings through the use of verbal or non-verbal symbols in a variety of contexts (p.13).

Speaking is the most prominent and indispensable tool in the Apps Yuga (twenty-first century), to create or achieve anything in the sophisticated world, placements, higher- education, knowledge of the language, and giving and receiving clear instructions from any higher-education level, are the keys to creating or achieving anything in the sophisticated world. Speaking is an oral productive phenomenon and plays a very significant role in the methodological framework of interviews and conversations at any stage. Learners need to understand the following five areas of speaking-knowledge components:

1. Mechanics: vocabulary, pronunciation, and grammar

2. Production: interaction and production of communicative elements
3. Relationship building
4. Understanding: Learners need to cater to the needs and deeds of the conversation to understand.
5. Cultural and Values Transformation: Time to understand the culture and ethnicity of the groups before and after speaking when Apps Yuga (Time of Mobile/Computer

Applications), netizens, and citizens have become inseparable human beings in the cobweb world.

As learners apply the five-component system (the researcher is proposing) to their speaking skills and ability, they can surely be very fluent speakers on any topic at any stage.

## 2. Literature Survey

Assessment is directly navigated towards the overall development of the individual before employing any rubrics to the desired model, it should properly give the students' learning objectives and outcomes to achieve its significance and importance (. Anderson, Lorin W., et al. (2001). Instructional methodologies are to be given to young L2 learners to get the basic concepts to develop speaking competence by imbibing speaking sub-skills. L2 learners are required to receive speaking-related instructions. (Burns, Anne, and Helen Joyce, 2109, 1997). As assessment is employed to know about students' abilities, it is not necessary that students must be proficient in all skills, one can master critical thinking to be proficient in skills. Analysis and evaluation can help students to be a thinker and critical thinkers in any domain. (Facione, P.A. (1990). The perils of our trusting our lives and fortunes to the decision-making of the people around us who are perplexed, uninformed, biased, not fair-minded, and unreflective. Core critical thinking skills such as inference, self-regulation, interpretation, evaluation, explanation, and analysis are needed to be a good critical thinker on any subject to assess it flawlessly. (Facione, P.A. (2011). Critical thinking involves reasoning and active consideration of what is received rather than a forthright acceptance of the ideas. The testing system in the examination process has been argued that the critical thinking ability of the learners cannot be boosted. Various types of formats and

models can help learners to engage effectively on testable items and formats. (Fahim, M., & Pezeshki, M. (2012). The integration of mind thought and language is always an indomitable spirit for a thinker.

The development of the three elements in the human psychic attributes is inseparable. Thought and knowledge cultivate basic thinking elements in the human mind to incorporate any subject after analyzing and evaluating systematically. (Halpern, D. F. (2003). Paul (1990) argues that the philosophical mind embarks a person to think critically, though it doesn't identify the philosophical aspects. The philosophical element ventures the thinkers in a broader sense to be applied to any universal domain in a fragmented manner. The unphilosophical mind deeply lies in the unattained mindset to subdue the biased, distracted, and untrustworthiness. Second language acquisition is always an integral part of language testing and assessment implicitly. The process of learning directly hinged upon testing tools of the language process through which learners can imbibe some of the second language aquisition elements. According to Glen Fulcher (2014), various perspectives from historical and practical play a significant and wider scope in testing and assessment. Extensive and elaborate examples will naturally enhance learners' abilities to acquire a language through penetrating Socratic dialogues, thoughtful inquiry, storytelling, and imaginary ideas to form 'why, what, how, and when to the learning pedagogical tools. Young learners and their brains can freely adopt the Socratic methods to engage in fruitful and innovative outcomes for language acquisition. (George, Lynda, 3970-3074, 2015).

Critical thinking can surely be developed amongst undergraduate-level students by giving topics and making them comprehend the basic elements of innovative inputs to come up with novel ideas. Malmir (2012) has asserted that Speaking skills can be implicitly and explicitly enhanced through critical thinking, and also emphasizes that speaking abilities and skills are to be an integral part of critical thinking as critical thinking can be taught to learners. Our quality of life is determined by the way we mechanise the quality of thoughts, and those qualities of thoughts are vividly determined by the considerable questions in the same domain. Paul (2006 & 2008) emphasized the quality of thoughts in our regular lifestyles. Socratic Question is the heart and key to critical thinking. The methodological framework of questing attitude should always flourish with the human

tendency, that renders learners' abilities to reach the zenith levels. Learning abilities and skills are meticulously, indeed, penetrated learners' intellectual humility and autonomy as they think the quality of thoughts with a systematized attitude of questing elements and nature.

Raju et al. (2023) argue that professional undergraduate engineering students can improve their speaking skills by engaging in critical thinking and utilizing the Socratic Questioning Approach (Paul, 2006), both implicitly and explicitly. Karthika, V. K. (2024) reported significant findings in their research, demonstrating empirical evidence of improvements in learners' speaking proficiency. The study also discusses the implications of using podcasts as tools for enhancing speaking skills in communicative English classrooms. Machado, R. P. (2024) emphasizes through empirical evidence that the IoT empower Framework serves as a crucial socio-material tool in IoT education. The framework highlights the interaction between the technical and social dimensions of IoT devices as pedagogical tools, which play a vital role in enhancing students' overall classroom performance. Mahapatra (2024) highlighted that engineering graduates who engaged in both listening and speaking activities together were more successful in developing English language skills compared to those who practised listening and speaking separately. Bhaumik et al. (2024) argued that as engineering education adapts to the contemporary environment, the methodologies they described provide instructors with a framework to equip students with the diverse skills required in today's rapidly changing technological world. Shinge and Kotabagi (2024) reported that students were asked to reassess their performance using the evaluation grid, and the results showed a notable improvement in their self-assessment scores. The assessment can surely be done through various activities in language proficiency. Dontham et al. (2016) emphasized the importance of pedagogical tools and approaches for language enhancement, particularly through the use of Information and Communication Technology (ICT) tools. These tools were implemented to evaluate students' performance and provide immediate feedback. Based on the feedback, appropriate actions were taken to improve student learning, leading to significant improvements. The MoMM approach proved to be highly effective for programming courses, and designing instructions and assessments according to cognitive levels also guided faculty in enhancing the course.

Language enhancement can surely be possible by looking at the different perspectives and views of the topic and others (Paul, Richard, & Linda Elder, 2019). To be a good speaker according to Nunan, D., (2015), one should be inculcated with good speaking techniques and approaches. Learners should be given some of the speaking tips and tricks implicitly and explicitly either to catch the basic ideation or to make them involved in the topic. Possibly, learners should be imparted through reliable materials from authentic sources. Learners' speaking abilities are to be honed with thought-provoking exercises. Critical thinking not only develops speaking abilities when a learner practices in the classroom and language acquisition labs, but also grammatical elements/aspects, and complex issues to set in simpler preparative view to broadening the thoughts at larger to penetrate them into possible ways to find out the remedial ways. (Muhammadiyah, H. et al., 62-64., 2020). Speaking skills can have deeper insights as critical thinking is implicitly and explicitly taught to the learners. Speaking skills can be significantly enhanced emphasized by Sanavi (2014) as students are taught critical thinking abilities to infuse the basic concepts to think and speak on any issues and topic. Genius questions are likely to make young minds think differently and innovatively to form any kind of positive paradigm in any discipline: it can be speaking, accounting, geometry, mathematics, and so on. Henceforth, the question should not be biased and distracted from any thoughts that always tend to be influenced by unstructured thoughts. (Duron, R., et al, 160-166, 2006). Common Reference Levels (CRL), according to Glover (2011), are used to know the learners' speaking abilities by adopting the Common European Framework of Reference for Languages at the undergraduate level.

Critical Thinking guides learners on the right and concrete ways to inculcate speaking abilities and skills that are implicitly part of the human language acquisition domain. Speaking skills play undoubtedly significant roles in placements and higher education, to reach the desired goals through speaking skills, well-organized activities, structured speaking components, real-time speaking examples, and exemplary paradigms would naturally enhance the speaking skills of learners at any stage. (Baker, J., & Westrup, H., section 10, 2003). Hughes and Lavery (2004) draw our attention to the relationship between language and thought and emphasize that the relationship is integral between the duo. They both express that 'thought is expressed in and through



language, but this claim, while true, is an oversimplification." We all use words not merely to express our thoughts but also to shape them. (p.10). Critical Thinking strategies help language learners to become active and critical analyzers, and fair-minded judges in the process of listening carefully to the other students' lectures/speeches, and topics-based utterances, by judging those utterances and making the best decisions about what to say in response to what has been uttered in the structured conversations by other autonomy intellectuals. (Malmir, A., & Shoorcheh, S., 608–617, 2012). Critical Thinking is a very fundamental goal of learning any domain or desired discipline. Lipman (2003) asserts that teachers should inculcate critical thinking elements and fundamentals amongst young learners, not just throwing the material or delivering lectures orally. Doing and believing in critical thinking is mostly acceptable to learners (p.46).

### 3. Methodology

#### 3.1.Ethics:

Anonymity for each student has been achieved by analyzing and encrypting data but not providing any personal information at any stage. No special focus has been given to age, gender, or community for the entire study. Complete attention has been exclusively paid to participating in the English language as the main objective of the study is to enhance speaking skills by using the Paul-Elder Cortical Thinking Framework.

#### 3.2. Description of statistical analysis of pretest:

The research materials have been statistically analyzed and processed using the method of Cambridge Assessment for Speaking. Students' progress was twice at the beginning and 6 months later, at the end of the 6 months, the proposed post-test was conducted for respondents. CEFR Speaking descriptors have been adopted to assess skills as tests of these are the globally accepted parameters for language assessment.

#### 3.3.Study Design:

The study has ontologically been designed to achieve the target results as the researcher had planned to get the desired outcomes through the research project. Paul-Elder Critical Thinking Framework research process involves many stages. The first stage

involves the researcher determining the relevance of the research topic and clearly defining research problems and objectives. The next stage (II stages) involves being involved in the literature survey and how Paul-Elder's Critical Thinking Framework, Critical Thinking Broad Area, and Speaking Skills are designated. This stage involves getting variously structured and framed dogmas, ideas, theories, and well-formulated approaches in it, Paul-Elder Critical Thinking Framework is part of Critical Thinking. The next stage (III stage) involves choosing a scientific and validated methodology to meet the desired goals and objectives of the research and forming groups after considering CEFR speaking levels. The fourth stage (IV stage) is involvement with the chosen Intervention Programme (IP) for students. It has been chosen after a pretest on Paul and Elder Critical Thinking Framework. The V stage involves very structurally the posttest for speaking after 6 months of duration. The final stage VI involves researching hypotheses, testing, and concluding the study.

#### 3.4. Limitations:

According to psycholinguistics, language development is restricted to certain parameters as learners try to comprehend speaking skills with their minds. According to the study, the researcher is supposed to get measurable outcomes based on the critical thinking accepted globally. However, the researcher's primary goal is to assess speaking skills by employing CEFR levels to the Paul-Elder Critical Thinking Framework, even though Critical Thinking assessments are available (The Watson- Glaser Critical Thinking Test, 1925) and the California Critical Thinking Skills Test (CCTST): Delphi Model. Facione, Peter A. (1990), Paul and Elder Critical Thinking Model (1998), Foundation for Critical Thinking. The above-mentioned critical thinking tests are standardized in the same domain, but the researcher has adopted the proposed framework to enhance speaking skills significantly. To assess speaking skills, CEFR speaking band descriptors have been adopted because the desired outcome is speaking skills and abilities. The researcher has identified that the adoption of CEFR speaking parameters for critical thinking skills is a limitation of the study.

#### 3.5. Random test:

Some of the students were not able to participate in the random test due to personal and family problems. 61 students have enrolled for the pretest. Of those, 116

have participated in a random test conducted by using some CEFR preliminary and A1 rubrics. The test was administered with the help of English faculty working in the same college. Two language faculty from the college participated and helped the researcher carry out the random test. Sample students for the random test were asked to speak on the topic for 1-2 minutes. That was shared with students after consulting staff in the same college as the existing teachers knew about it, and the researcher wanted to know their speaking abilities.

### 3.6. Methodological Framework:

Qualitative Analysis has been adopted in the study to assess the student's speaking skills by using the Paul-Elder Critical Thinking Framework, students' recordings of speaking skills have been recorded under Qualitative Analysis.

A total of 61 students from B. Com and B. Sc took part in the study while studying at Bhagyaradhi Degree College located at Chintal in Hyderabad, India. It offers only traditional courses such as B.Sc. and B. Com to students, and it is affiliated with Osmania University, Hyderabad. The researcher meticulously discussed with students the concept and objectives of the study, and also parents' consent was taken into consideration to avoid further conflicts, and the researcher let them know the importance of the speaking skills of their kids and being critical thinkers in the world. The study has also been permitted with a letter of approval from the management and principal to the study in the stipulated period to avoid further conflicts, and college authorities felt happy that their students were a part of the new investigation and were setting new horizons and pragmatic paradigms in critical thinking to enhance speaking skills that are very important for undergraduate students. All 61 students agreed to be part of the study for 6 months by giving permission orally and in writing.

### 3.7. Pre-test Samples:

A random test has been formulated for 116 students to know their speaking skills and abilities based on the CEFR (Common European Framework of Reference for Languages) band descriptors. Students have not been informed anything about the test and objectives of the formulation in the pretest. The primary objective of the pretest was to know the standards and speaking abilities of students. 61 students have been

selected based on their speaking abilities. To assess their speaking skills, CEFR speaking band descriptors have possibly been formulated.

### 3.8. Process of pretest:

The following are the test conducted in the pretest to know the samples speaking abilities.

A. Picture Description,

B. Small Talk, and

C. Personal Interview

There have been listed three elements of a pretest, each associated with a specific number of rounds. Elaborate on each pretest element as mentioned below:

#### Picture Description (1 Round)

This element involved presenting participants with a picture and asking them to describe or provide insights about it. The purpose was to assess their ability to articulate thoughts, observe details, and communicate effectively. The pretest typically consisted of one round dedicated to this activity.

#### Small Talk (2 Round)

Small talk was a casual and informal conversation, often used to gauge a student's communication skills, social aptitude, and ability to engage in light conversations. It had the pretest includes two rounds of small talk, indicating a focus on sustained interaction and possibly assessing the participant's adaptability and ease in social situations.

#### Personal Interview (3 Round)

The personal interview was a structured one-on-one conversation between the students and the interviewer. It delved deeper into the individual's background, experiences, skills, and personality traits. The pretest involved three rounds of personal interviews, suggesting a comprehensive evaluation of the participant's suitability for a particular role or scenario.

The pretest process comprised picture description, small talk, and personal interviews, with varying

rounds dedicated to each element. This approach allowed for a multi-faceted assessment, covering different aspects of communication, social interaction, and personal attributes of each student.

### Selective Intervention Programme:

Sample students, who obtained A1 and below it according to CEFR speaking descriptors., were chosen for the intervention program, and it lasted for 4 months for 61 students whose band score was A1 and less than A1 according to adopted speaking rubrics. Students were given a selective intervention Programme on the Paul-Elder Critical Thinking Framework (PECTF) to enhance their speaking skills. The intervention was conducted by taking a single stretch of 2-hour sessions in a day and continued for 6 months extensively. A total of 150 hours (which is equal to A2 CEFR) program has been imparted on PECTF to enhance speaking skills exclusively. The intervention has been conducted in the selected degree college within the given time frame. The researcher maintained daily observation notes as and when the session was conducted, and corrected students' speaking abilities according to critical thinking skills. The researcher let the students know their speaking elements and language aspects at the end of the session and made them correct themselves. The researcher tried to install clarity of thought, accuracy in speaking, topic precision, speaking relevantly, thinking very deeply about the topic/picture, thinking of any topic logically to get more information on it, providing critical thinking materials like newspapers cuttings, magazines outline stories, storytelling in other perspectives, gap fillings, conducting group discussions on logical topics, playing audio and video recordings and making them complete the tasks. Giving a situation and making them be a part of the situation to think and speak as if they were in it. Making them create a situation and ask other students to act upon it.

### 3.9. Posttest:

The researcher again administered another test called "posttest" after completion of the intervention program. 61 students' post recordings have been filed by segregating them into a folder with the pretest and posttest respectively. It was saved by the codes that were given to student samples at the commencement of the study, and further, they were advised to remember and save them till the end of the project.

## 4. Significant Findings And Results

After data collection, the researcher has possibly applied the Qualitative Analysis (Creswell, 2018) method to 61 students who were part of the intervention. The following results were gradually obtained after successfully conducting an

**Table 1 : Qualitative Analysis Of Pretest And Posttest**

Sr. No	SSN	Pretest	Posttest	Research Observation
1	SS1	A1	A2	Enhanced
2	SS2	A1	B1	Significantly enhanced
3	SS3	Pre-A1(Mover)	A2	Enhanced
4	SS4	A1	A1	Enhanced
5	SS5	A1	A2	Enhanced
6	SS6	A1	A2	Enhanced
7	SS7	A1	A2	Enhanced
8	SS8	A1	A2	Enhanced
9	SS9	A1	B1	Significantly enhanced
10	SS10	A1	A1	No Improvement
11	SS11	A1	A2	Enhanced
12	SS12	A1	A2	Enhanced
13	SS13	A1	B1	Significantly enhanced
14	SS14	A1	A2	Enhanced
15	SS15	Pre-A1(Mover)	A2	Enhanced
16	SS16	A1	B1	Enhanced
17	SS17	A1	A2	Enhanced
18	SS18	A1	A2	Enhanced
19	SS19	A1	B1	Enhanced
20	SS20	A1	A2	Enhanced
21	SS21	A1	A2	Enhanced
22	SS22	A1	A2	Enhanced
23	SS23	A1	A2	Enhanced
24	SS24	A1	A1	No improvement
25	SS25	Pre-A1(Mover)	A2	Enhanced
26	SS26	A1	A2	Enhanced
27	SS27	A1	A2	Enhanced
28	SS28	A1	B1	Significantly enhanced
29	SS29	A1	A2	Enhanced
30	SS30	A1	A2	Enhanced
31	SS31	A1	A2	Enhanced
32	SS32	A1	B1	Enhanced
33	SS33	Pre-A1(Mover)	A2	Enhanced
34	SS34	A1	A1	Enhanced

35	SS35	A1	A2	Enhanced
36	SS36	A1	A2	Significantly enhanced
37	SS37	A1	A2	Enhanced
38	SS38	A1	A2	Enhanced
39	SS39	A1	B1	Enhanced
40	SS40	A1	A1	Enhanced
41	SS41	A1	A2	Enhanced
42	SS42	A1	A2	Enhanced
43	SS43	A1	B1	Enhanced
44	SS44	A1	A2	Enhanced
45	SS45	Pre-A1(Mover)	A2	Enhanced
46	SS46	A1	B1	Significantly enhanced
47	SS47	A1	A2	Enhanced
48	SS48	A1	A2	Enhanced
49	SS49	A1	B1	Enhanced
50	SS50	A1	A2	Enhanced
51	SS51	A1	A2	Enhanced
52	SS52	A1	A2	Enhanced
53	SS53	A1	A2	Enhanced
54	SS54	A1	A1	No improvement
55	SS55	Pre-A1(Mover)	A2	Enhanced
56	SS56	A1	A2	Enhanced
57	SS57	A1	A2	Enhanced
58	SS58	A1	B1	Significantly enhanced
59	SS59	A1	A2	Enhanced
60	SS60	A1	A2	Enhanced
61	SS61	A1	A2	Enhanced

intervention program for 61 students. The results are subjected to CEFR-speaking band descriptors.

The student test levels information documented in Table 1 has been thoroughly illustrated through visual representation to enhance clarity in interpreting the

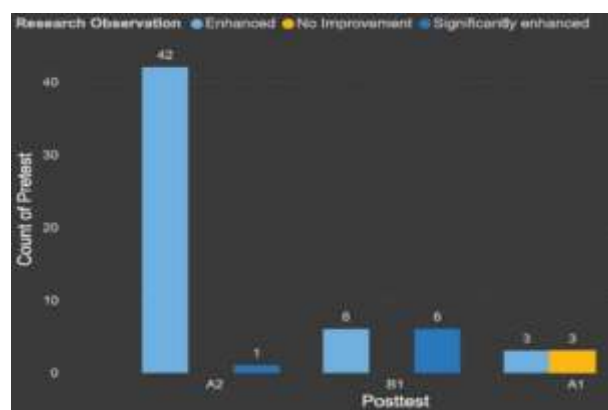


Fig. 1 : Significant observational counts of pre and post-tests

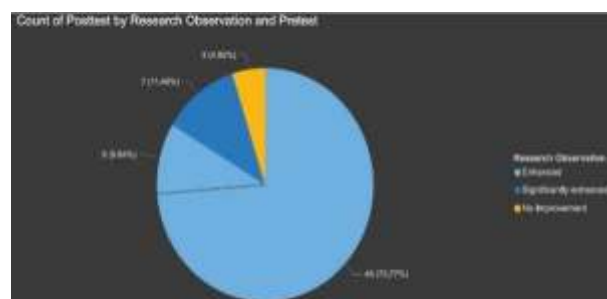


Fig. 2 : Pre and Post-test research observations

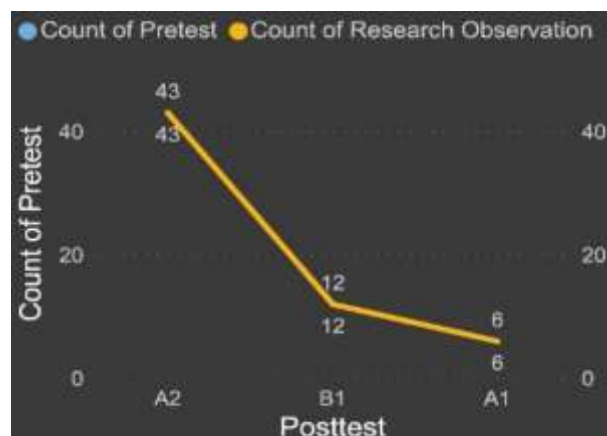


Fig. 3 : Improvement in CEFR levels of 61 students

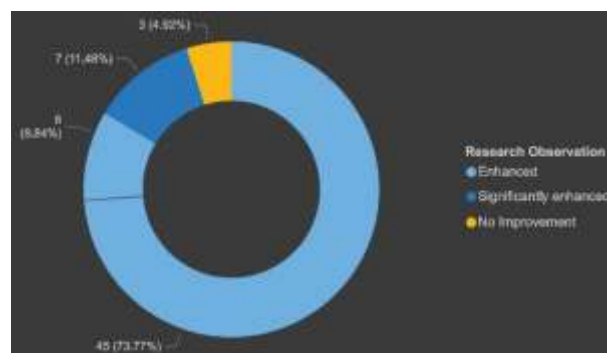


Fig. 4 : Not Improvement

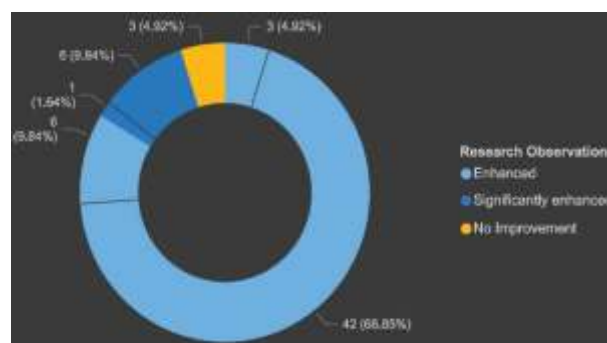


Fig. 5 : Data of Student Enhancement



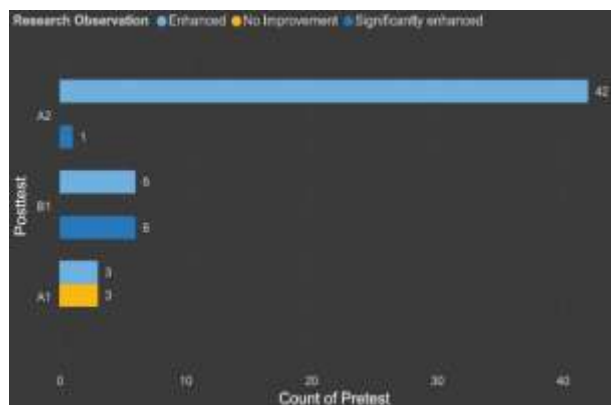


Fig. 6 : Students Significant enhancement

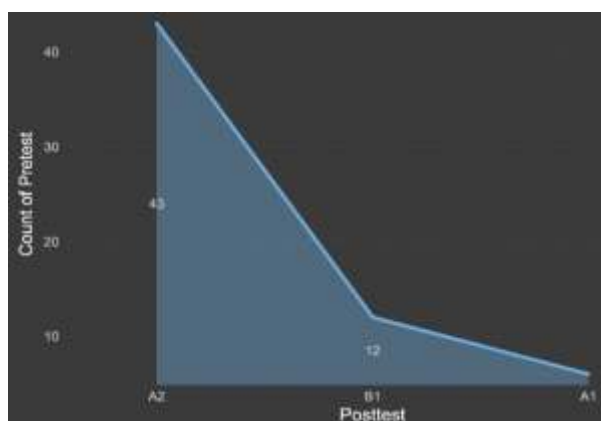


Fig. 7 : CEFR levels and No. of student participation

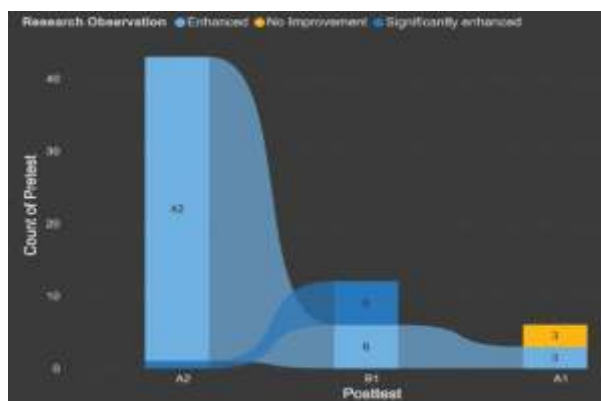


Fig. 8 : Research observations of A1, B1 and A2 students

results. The power BI platform was adopted to generate various graphs as part of the visualization process.

After the post-test was administered to 61 students, Grammatical Range and Accuracy, Fluency, Spoken Interaction and Production, Lexical Resources, and Pronunciation are the band descriptors in the CEFR. 22 students have obtained the A2 level, which is equal

to 73.33%, 5 students could get the B1, which is 16.66%, and 3 students could retain the same level as they got in the pretest (shown in Figs.1-3). 3 students obtained A1 again, which is equal to 10% of the overall samples. The significant results (shown in Figs. 4-6) mentioned above were observed and recorded, and the results were analyzed and assessed based on the CEFR speaking descriptors (shown in Fig. 7). Despite all efforts being made to make these 3 students on par with other students, they could not achieve any level as shown in table 1. The researcher reinvestigated and asked them very meticulously about low-level performance. Of course, they were in

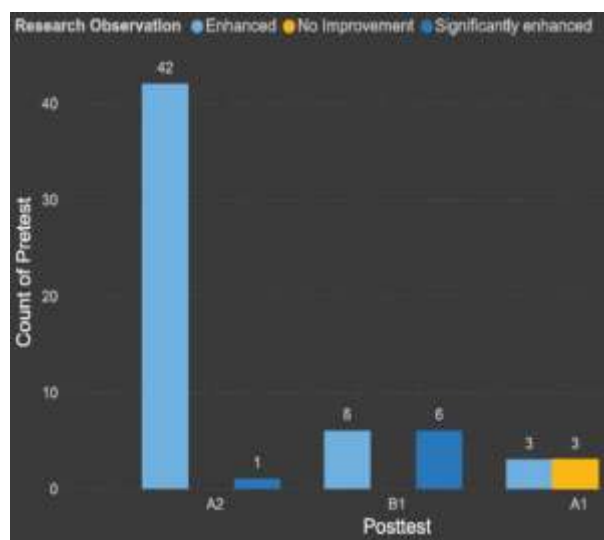


Fig. 9. Count of pre and post-test of A2, B1 and A1

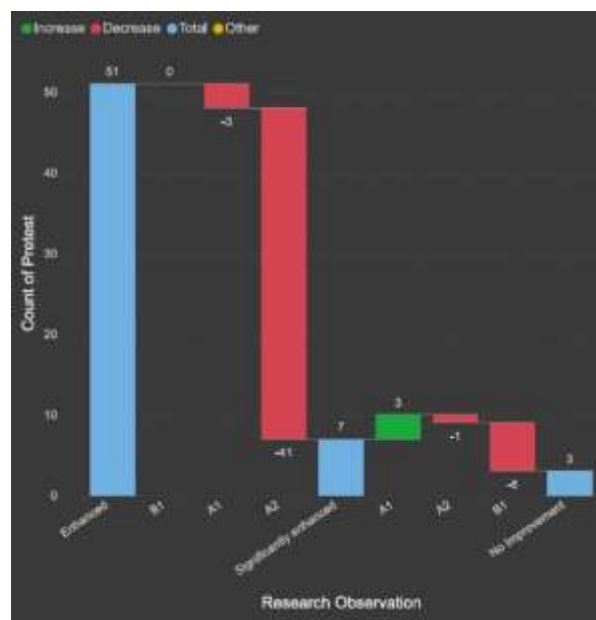


Fig. 10. Increase and decrease of A1, A2 and B1

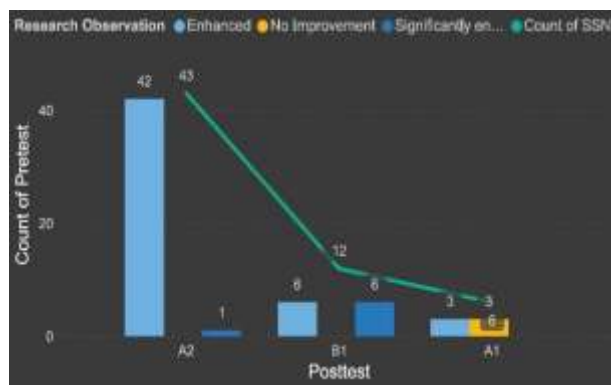


Fig. 11. Total count of SSNs

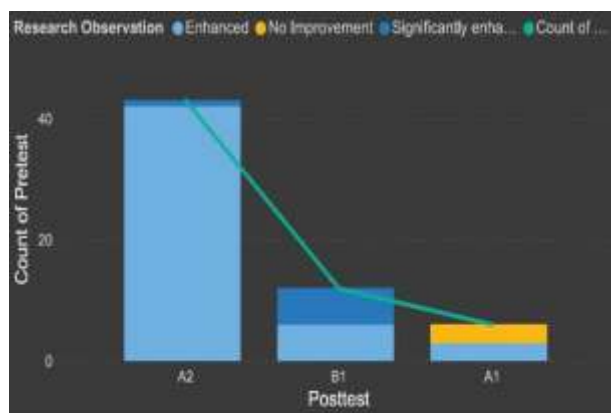


Fig. 12. CEFR levels of post-test

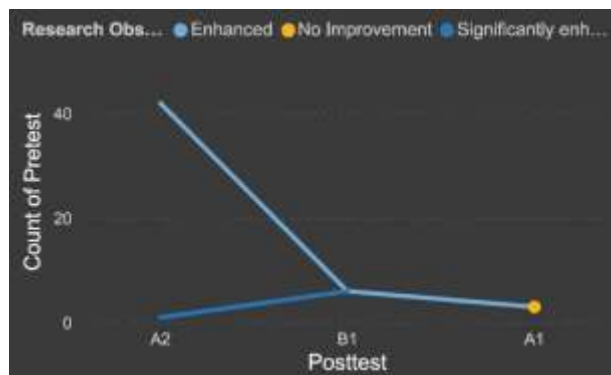


Fig. 13. Comparison of both tests A1, A2, and B1

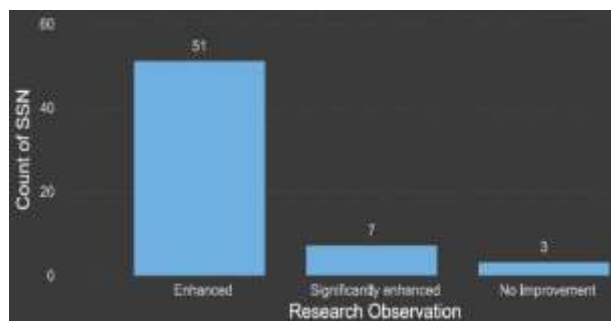


Fig. 14. Research observations of 3 segments

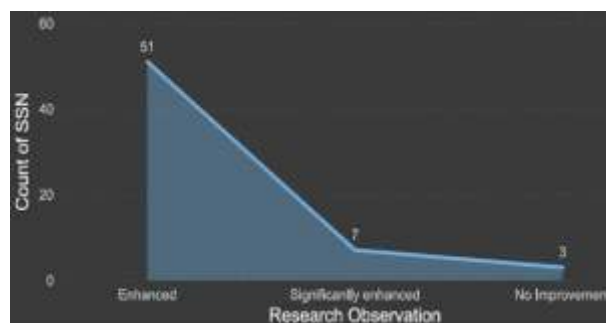


Fig. 15 : Figuring out of 61 students' research observations

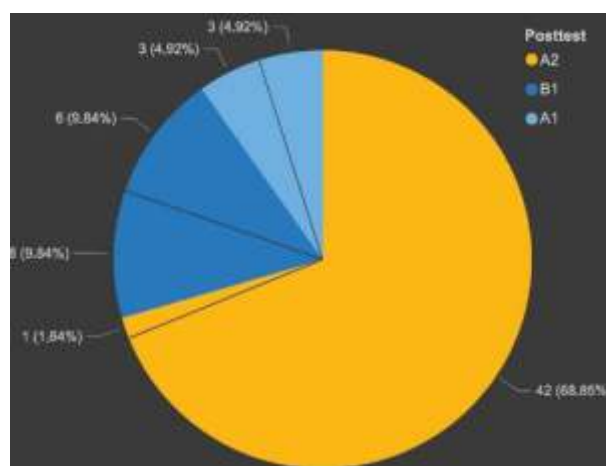


Fig. 16: Post-test observations of all levels



Fig. 17 : Comprehensive observational inputs of 61 students

the observation as the researcher noted their speaking skills and abilities in a daily observation notebook.

The three students included in the samples mentioned that they were grappling with personal and family issues, leading to a lack of meticulous focus, as depicted in Figs. 8-10. Additionally, family members of some students acknowledged these challenges, emphasizing that the researcher was not at fault for these issues. The overall results of the 61 students participating in the intervention program for the

specified period have been thoroughly examined and presented visually in Figs. 11-17. Fig. 11-13 represents that CEFR levels of the posttest A1, A2 and B1 have been significantly decelerated. The three segments of students who participated in the post-test are shown in Figs. 14-15, and observed that the 51 students have clustered in the enhancement category. Furthermore, it is witnessed from Fig. 16 that 4.92% of students at the A1 level, 9.84% of students at the B1 level, and 68.85% of students at the A2 level in the posttest observations. Finally, Fig. 17 depicts the comprehensive observations on CEFR levels of both pre and post-tests for 61 students. It is observed from the figure that, there is a 4.92% of growth in their CEFR speaking level from pretest to posttest.

## 5. Conclusion

The research study underscores the potential of enhancing undergraduate-level speaking skills through the application of the Paul-Elder Critical Thinking Framework. This framework, traditionally used in various subjects, is equally effective in the realm of English Language Teaching (ELT), Computer Assisted Language Learning (CALL), and Interactive Communicative Skills (ICS) labs. The study reveals that employing the Paul-Elder Critical Thinking Framework in language learning platforms, such as traditional courses like B. Sc and B. Com, yields comparable results in terms of improving speaking skills. The framework proves to be versatile, adapting well to diverse educational settings. The findings suggest that speaking skills development is linked to psycholinguistic factors and the learners' cognitive abilities. The Paul-Elder Critical Thinking Framework serves as a valuable tool for fostering critical thinking in learners, both before and during speaking. By expanding the cognitive framework, students can apply their thinking abilities, leading to improved speaking skills.

- The noteworthy outcomes of the current investigation are,
- The implementation of the Paul-Elder Critical Thinking Framework stimulates learners' thinking abilities, contributing to the enhancement of their speaking skills.
- There are 4.92% of students at the A1 level, 9.84% of students at the B1 level, and 68.85% of students at the A2 level in the posttest speaking observations.

- The comprehensive observations on CEFR levels of both pre and post-tests for 61 students confirm that there is a 4.92% growth in their CEFR speaking level from the pretest to the post-test.
- When students comprehend a situation, analyze it, and gain clarity of thought, their spoken expressions exhibit accuracy and fairmindedness.
- The structured application of critical thinking, as facilitated by the framework, ensures formative progress in speaking skills.
- The study argues that while imagination plays a role in psychological frameworks, the quality of thinking and its practical application are crucial for developing speaking skills.
- It emphasizes the significance of understanding critical thinking and adopting different perspectives for achieving optimal outcomes in speaking.
- In essence, the research supports the idea that cognitive engagement through the Paul-Elder Critical Thinking Framework is a key factor in refining speaking skills, transcending mere imaginative perception to achieve practical and effective communication.

## Acknowledgment

To express sincere gratitude for the substantial and comprehensive support provided by the Department of English, KLEF (Deemed to be University), and the management of Bhagyaradhi Degree College, IDPL, Chintal, Hyderabad, TS, India, in providing language lab facilities and granting permission to conduct a selected intervention programme for the stipulated of the investigational study. There is no external grant for the research work, and it has never been plagiarized anywhere. On the request, the intervention program's results and recordings on speaking skills can be supplied.

## References

Anderson, Lorin W., et al. "A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives, abridged edition." White Plains, NY: Longman 5.1 (2001).

- Anjana Krishna, S., & Karthika, V. K. (2024). Podcasts as Teaching Tools: Investigating the Impact of Learners' Transportable Identities on Their Speaking Proficiency. *Journal of Engineering Education Transformations*, 37(4), 111 – 123. S c o p u s . <https://doi.org/10.16920/jeet/2024/v37i4/24164>
- Baker, J., & Westrup, H. (2003). *Essential speaking skills*. A&C Black.
- Bhaumik, K., Reddy, S. S., AvikDatta, G. I., & Sarif, B. M. (2024). Fostering Higher-Order Thinking: Pedagogical Strategies in Engineering Education. *Journal of Engineering Education Transformations*, 38(1).
- Burns, Anne, and Helen Joyce. *Focus on Speaking*. National Centre for English Language Teaching and Research, Macquarie University, Sydney, New South Wales, Australia 2109, 1997.
- Chaney, A. L., & Burk, T. L. (1998). *Teaching Oral Communication in Grades K-8*. Allyn and Bacon, Order Processing, PO Box 11071, Des Moines, IA 50336-1071.
- Dontham, R., Patil, S. P., Patil, M. A., & Ingale, A. K. (2016). Educating IT-Engineering Theory Courses Using BLOOMS Taxonomy (TC-BT) as a Tool and Practical Courses Using Magic of Making Mistakes (PC-MoMM): An Innovative Pedagogy. *Journal of Engineering Education Transformations*, 29(3), 75-84.
- Duron, R., Limbach, B., & Waugh, W. (2006). Critical thinking framework for any discipline. *International Journal of Teaching and Learning in Higher Education*, 17(2), 160-166.
- Facione, Peter. "Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction (The Delphi Report)." (1990).
- Facione, Peter A. "Critical thinking: What it is and why it counts." *Insight assessment* 2007.1 (2011): 1-23.
- Fahim, Mansoor, and Maryam Pezeshki. "Manipulating critical thinking skills in test-taking." *International Journal of Education* 4.1 (2012): 153.
- Fulcher, Glenn. *Testing second language speaking*. Routledge, 2014.
- George, Lynda. "Socrates on teaching: Looking back to move education forward." *Procedia-Social and Behavioral Sciences* 174 (2015): 3970-3974
- Glover, P. (2011). Using CEFR level descriptors to raise university students' awareness of their speaking skills. *Language Awareness*, 20(2), 121-133.
- Halpern, Diane F. *Thought and knowledge: An introduction to critical thinking*. Psychology Press, 2013.
- Hughes, W., & Lavery, J. (2004). *Critical thinking: an introduction to the basic skills*. 4th.
- Lipman, M. (2003). *Thinking in education*. Cambridge university press.
- Machado, R. P., Norbistrath, U., & Jubeh, R. (2024). IoT Educational Framework Case Study: Devices as Things for Hands-on Collaboration. *Journal of Engineering Education Transformations*, 37(Special Issue 2), 385–392. S c o p u s . <https://doi.org/10.16920/jeet/2024/v37is2/24066>
- Mahapatra, B. P. (2024). Activities of Listening Skill in Conjunction with Speaking Help Enhancing Language Competence of Engineering Graduates. *Journal of Engineering Education Transformations*, 37(4).
- Malmir, Ali, and Samad Shoorcheh. "An investigation of the impact of teaching critical thinking on the Iranian EFL learners' speaking skill." *Journal of Language Teaching and Research* 3.4 (2012): 608-617.
- Malmir, A., & Shoorcheh, S. (2012). An investigation of the impact of teaching critical thinking on the Iranian EFL learners' speaking skills. *Journal of Language Teaching and Research*, 3(4), 608-617.
- Muhammadiyah, H., Mahkamova, D., Valiyeva, S., & Tojiboyev, I. (2020). The role of critical thinking in developing speaking skills. *International Journal on Integrated Education*, 3(1), 62-64.



- Nunan, D. (2015). Teaching English to speakers of other languages: An introduction. Routledge.
- Paul, Richard W. "Critical and reflective thinking: A philosophical perspective." Dimensions of thinking and cognitive instruction (1990): 445-494.
- Paul, Richard, and L. Elder. "The miniature guide to the art of asking essential questions." Publisher: Foundation for Critical Thinking (2006).
- Paul, Richard, and Linda Elder. The miniature guide to critical thinking concepts and tools. Rowman & Littlefield, 2019.
- Raju, M., Sivapurapu, L., Sasanka, M., & Thumma, T. (2023). Developing Speaking Competence of Professional Undergraduate Students Through Socratic Questing Approach. Journal of Engineering Education Transformations, 36(3), 93 – 114 . S c o p u s . <https://doi.org/10.16920/jeet/2023/v36i3/23102>
- Sanavi, R. V., & Tarighat, S. (2014). Critical Thinking and Speaking Proficiency: A Mixed-method Study. Theory & Practice in Language Studies, 4(1).
- Shinge, J., & Kotabagi, S. (2024). Augmenting Freshman Rural Engineering Students' Interaction in English Language using Task Based Language Teaching (TBLT). Journal of Engineering Education Transformations, 37(Special Issue 2).