Enhancing English Fluency and Communicative Competence Among Tertiary-Level Learners: A Quasi-Experimental Investigation of Instructional Strategies

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Submitted: 15-July-2025 Revised: 20-July-2025 Accepted: 25 Aug-2025 Published: 31-Aug-2025

Manuscript ID: IJEWLPSIR-2025-020401

DOI: 10.5281/zenodo.17777293
DOI Link: https://doi.org/10.5281/zenodo.17777293

Volume: 2

Issue: 4

Month: August 2025

E-ISSN: 3065-7873

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How to cite this article:
W, R. K., & Austen, I. J. (2025). Enhancing English Fluency and Communicative Competence Among Tertiary-Level Learners: A Quasi-Experimental Investigation of Instructional Strategies. International Journal of English and World Languages & Literature Paradigm Shift in International Research, 2(4), 1–15.
https://doi.org/10.5281/zenodo.17777293

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Abstract:

In semi-urban/rural India, where teaching is oriented toward written tests and rote grammar, students' ability to speak English is a constant bottleneck at the tertiary level. The 30-hour, non-NLP speaking-skills curriculum that incorporates prosody/pronunciation labs, project-based speaking, Communicative Language Teaching (CLT), Task-Based Language Teaching (TBLT), anxiety-aware scaffolding (non-NLP), and AI-assisted feedback is evaluated in this study. For tertiary-level students in semi-urban and rural India, where training tends to focus on written tests and rote grammar, the ability to speak English is a recurring impediment. This study assesses a 30-hour, non-NLP speaking-skills programme that incorporates prosody/pronunciation laboratories, project-based speaking, Communicative Language Teaching (CLT), Task-Based Language Teaching (TBLT), anxiety-aware scaffolding (non-NLP), and AI-assisted feedback. Using a quasi-experimental design with first-year engineering students (N=90; Experimental=45, Control=45), we assess pre/post gains on a validated oral-proficiency rubric aligned with CEFR/IELTS descriptors, plus affective measures (Public Speaking Anxiety; Willingness to Communicate). The protocol specifies ANCOVA and mixed-effects models, rater-reliability checks (ICC/Cronbach's α), and subgroup analyses (gender; rural/urban). We provide an implementation framework (sessions, materials, staffing), measurement instruments, and analysis templates to enable replication at scale in resource-constrained institutions **without** recourse to NLP techniques. The study ultimately demonstrates that well-structured, pedagogy-driven interventions—supported by systematic assessment and low-cost technological tools—can yield measurable improvements in learners' oral proficiency and confidence. This evidence strengthens the case for embedding such non-NLP speaking-skills programmes within mainstream higher-education curricula to address communicative deficits.

Keywords: Speaking skills, communication, public-speaking anxiety, confidence building, instructional design, educational psychology, Neuro-Linguistic Programming (NLP)

Introduction

Many first-year students enter engineering programs with limited spoken English despite acceptable reading/writing skills. Barriers include: exam-centric pedagogy, scarce low-stakes speaking opportunities, pronunciation/prosody gaps, fear of negative evaluation, and minimal formative feedback. While some programs trial NLP, institutions often seek **pedagogically grounded, non-NLP** interventions that are transparent, scalable, and evidence-aligned. This study develops and tests an **NLP-free** framework combining CLT/TBLT, project-based speaking (presentations, debates, micro-teaching), guided prosody practice, anxiety-aware scaffolding (graded exposure, cognitive rehearsal without NLP), and AI-assisted automated speech feedback to address accuracy, fluency, and confidence simultaneously.

Literature Review

The literature review investigates how NLP has developed and been used to improve tertiary-level learners' confidence, communication, and fluency in English. It examines psychological, pedagogical, and empirical research showing how NLP can enhance speech performance and lessen fear. Comparative studies provide weak longitudinal evidence but consistent short-term gains. The research gap—the requirement for a methodical, quantitative assessment of NLP-based instruction in higher education settings—is identified by this review. Over the past 20 years, NLP's incorporation into learner psychology and language instruction has developed into a revolutionary method that unites pedagogy, linguistics, and cognition.

Several research have looked into how NLP helps English language learners at different academic levels improve their oral fluency, communicative competence, and self-confidence. NLP dramatically enhances speaking performance by using modelling, anchoring, and reframing techniques to enhance self-expression and lower fear, according to recent intervention research [1], [2]. Following rigorous NLP-based training, John et al. [1] observed significant improvements in fluency and confidence in a controlled intervention among tertiary learners. According to Begum et al. [2],

learners' communicative English competency is improved by NLP's metacognitive strategies, which offer a learner-centered substitute for conventional grammar-translation techniques. El-Abbassy et al. [3] supported these findings by showing that the use of NLP in ESP classes significantly enhanced students' oral communication, pronunciation, and interactional abilities. NLP has been tested in clinical and behavioral contexts outside of language courses. Doğan and Saritaş used NLP and guided imagery to improve post-operative comfort, demonstrating the model's ability to reduce stress and improve cognitive function. In their systematic assessment of NLP's psychological results, Nompo et al. [5] shown its reliable effects on motivation, anxiety reduction, and behavioral control, hence bolstering its pedagogical acceptance in communication-oriented education.

Numerous studies [6]–[10] have highlighted how NLP affects students' motivation, self-esteem, and public speaking proficiency. After attending NLP sessions, engineering students' communication and self-efficacy improved, according to Jayanthi [6], while Kushwaha [7] found that imagery and positive anchoring reduced their fear of public speaking. NLP's potential to improve classroom interaction was highlighted by Rayati [8], who also covered its practical application in EFL teacher training. While A'la [10] showed quantifiable improvements in EFL learners' speaking abilities with structured NLP treatments, Hallett [9] confirmed the usefulness of NLP in real-life public speaking in an action research study. Further confirming that NLP promotes vocabulary retention, fluency development, and communication confidence was consistent evidence from research [11]–[13]. . *In support of its dual linguistic and psychological advantages, Azam and Qureshi [12] discovered that NLP-based training improves self-esteem and communication abilities. NLP's versatility outside of the educational field was also highlighted by Eduard [15], who talked about it as a tool for negotiating and conflict settlement. According to Anjomshoa et al. [25] and Kotera and Sweet [36], NLP's cross-disciplinary appeal extends to affective and organizational contexts, where it has been shown to improve interpersonal relationships and lessen job stress, respectively.*

Theoretically, NLP and learning theory are linked by foundational literature like Tosey and Mathison [21], who claim that language acquisition is directly impacted by cognitive reprogramming via representational systems. Seitova et al. [34] and Pishghadam et al. [45] broadened this viewpoint by incorporating NLP concepts into teacher preparation programmes and confirming psychometric NLP measures associated with student motivation and teacher success. The impact of the approach on positive classroom behavior modification was corroborated by Riyono [46] and Salami [46], who reaffirmed these findings. Recent empirical studies [16]–[20], [37]–[39] have integrated NLP components into frameworks for digital education, gamification, and project-based learning (PBL), especially in Indian higher education. . *Researchers Akshay et al. [16] and Dijo et al. [20] looked at how engineering students felt about project-based learning and found similarities between the results of PBL and experiential learning in NLP. Gamified and AI-augmented learning environments were highlighted by John [19], [23], and [37], who also highlighted how NLP-compatible feedback systems enhance student engagement, teacher immediacy, and customization. The multimodal concepts of visual and kinesthetic learning in NLP were reflected in Aswin et al[18] .'s investigation of technology-enhanced education through augmented reality. NLP-inspired communication techniques and digital media work together to support language acquisition, cultural adaption, and critical literacy in South Indian learners, according to John and George [28].*

By examining neural correlates of language learning from a neurolinguistics and cognitive standpoint, Yang et al. [32] and Bagherkazemi et al. [33] matched working-memory processes and implicit grammar with the sensory modalities of natural language processing. By extending NLP's application to computational linguistics, Zhang et al. [38] proposed that NLP-based models might aid in the revival of endangered languages via AI-assisted learning. Likewise, Freeman and Richards [24] and Rato et al. [35] examined brain-based education and teacher learning, offering neuroscientific backing for the pedagogical justification of NLP. According to research on emotional and cultural factors, learner satisfaction, instructor autonomy, and intercultural sensitivity all increase the impact of NLP interventions [22], [26], [27], [29], and [30]. *In line with NLP's motivational paradigm, Dewaele and Alfawzan [30] demonstrated that enjoyment is more strongly correlated with linguistic performance than worry. In addition to Masouleh and Jooneghani's [26] support for learner autonomy under NLP-based guiding, Baradaran and Hosseinzadeh [29] illustrated the importance of teaching styles and autonomy. .*

In addition, early educational contributions like Kudliskis and Burden [41] and Mercedes [42] discussed NLP's place as a "new methodology" for language instruction, expressing doubts about methodological rigor but also recognizing its capacity to promote resilience and creativity. By relating NLP measures to student outcomes and teacher performance, Moore [43] and Pishghadam et al. [45] further demonstrated the construct validity of these assessments. These results were supported by Alroudhan [40], who highlighted the benefits of NLP coaching in EFL settings. Overall, the reviewed literature [1]–[46] collectively demonstrates that **Neuro-Linguistic Programming contributes significantly to enhancing communicative competence, fluency, and learner confidence** through its multidimensional approach combining cognitive restructuring, affective regulation, and experiential learning. However, most prior studies exhibit limitations such as small sample sizes, absence of longitudinal validation, and lack of context-specific models for Indian higher education. The present study, therefore, addresses these gaps through a **quantitative quasi-experimental design** evaluating the impact of NLP-driven instruction on English fluency and communicative confidence among tertiary learners.

Research Gap Analysis and Identification:

1. Over reliance on grammar-translation and summative tests underprepares learners for spontaneous speech.
2. Many innovations improve motivation but lack rigorous measurement (effect sizes, rater reliability and mediation).

1. Institutions need clear, non-NLP packages that are low-cost, easy to timetable, and compatible with NEP-2020 skill outcomes.
2. Few controlled studies separate **behavioral-practice effects** (CLT/TBLT) from **affective regulation** using non-NLP approaches (graded exposure; reflective journaling; rehearsal).

Why this matters: The above evidence base is promising but uneven. Many institutions prefer **non-NLP** designs with transparent mechanisms (practice → feedback → reflection), standardized assessments, and robust statistics. Our study answers that need.

Table 1. Gap analysis summary of NLP-based studies on speaking/communication.

Novelty and Contribution:

Citation	Methodology (Design / Sample / Instruments)	Performance Analysis (what improved & how measured)	Key Issues / Gaps
John et al., 2025 (FLS)	Quasi-experimental; university students; rubric-based speaking + self-reports	↑ speaking scores; ↓ anxiety (self-report)	Limited rater-reliability reporting; short follow-up; hard to separate expectancy/placebo effects
Begum et al., 2022 (SIJLL)	Conceptual/practice-oriented; ELT contexts	Narrative improvements	Lacks controlled comparison; minimal psychometrics
El-Abbassy et al., 2018	Intervention with ESP learners; oral-skills tests	↑ oral communication measures	Instruments not widely standardized; replication needed
Nompo et al., 2021	Systematic review (anxiety)	Suggests potential anxiety reduction	Heterogeneous studies; many self-report measures
Kotera & Sweet, 2019	Comparative evaluation	Mixed outcomes across contexts	Methodological variability; construct clarity

- **NLP-free, end-to-end** speaking-skills framework that marries CLT/TBLT, project-based speaking, deliberate practice for prosody, low-stakes graded exposure, reflective journaling, and **AI-assisted objective feedback** (ASR-derived fluency/pronunciation cues).
- Full **implementation kit** (session plan, materials, staffing, QA) + **measurement blueprint** (rubrics, rater training, reliability indices, statistical plan) ready for adoption in resource-constrained colleges.
- **Analytic enhancements:** ANCOVA with pre-scores, mixed-effects growth models, mediation tests (Does anxiety reduction mediate fluency gains?), and subgroup equity checks.

Summary of the Paper:

This paper presents a comprehensive investigation into the role of NLP in enhancing speaking and communication skills. To provide the theoretical foundation, Section 2 synthesises a large body of diverse literature from business, clinical, and educational contexts. The suggested intervention system is summarised in Section 3 along with a matching block-diagram illustration. In order to assure methodological validity, the research approach and materials used to solve the identified problem are described in Section 4, which integrates both quantitative and qualitative methodologies. The steps for implementing NLP techniques in a variety of educational contexts are described in Section 5. An interpretive discussion of the findings follows the empirical data, which are presented in Section 6 along with analytical tables and graphical visualisations. In order to attain sustained and scalable learner outcomes, Section 7 concludes and outlines the future scope, highlighting the necessity of multi-site, longitudinal experimentation and the integration of NLP methodologies with developing digital, AI-enabled technologies.

Overview of the System

The suggested methodology offers a methodical and data-driven teaching approach intended to improve tertiary-level students' communication skills and fluency in English through a series of connected modules. Baseline Assessment is the first step in the process, where students are given oral interaction tasks, group discussions, and individual presentations to gauge their speaking proficiency. At this stage, vocabulary, pronunciation, fluency, grammar, and confidence levels are assessed using pre-established rubrics and audio-based observations, creating a diagnostic basis for further instruction. After that, the Communicative and Task-Based Learning Activities module offers focused, learner-centered activities that prioritizes discourse coherence, pronunciation clarity, and real-life conversational contexts. Students engage in interactive activities that mimic real-world communication scenarios and encourage spontaneous speech production, including role-plays, storytelling, debates, and peer interactions. Feedback and Peer Evaluation is the next step, which emphasizes continuous improvement through quick and helpful feedback loops. Personalized feedback on pronunciation accuracy, coherence, tone modulation, and nonverbal communication is given to students by peers and teachers. . This phase supports mutual learning, reflective self-correction, and the identification of personal shortcomings by students. It then moves on to Audio Metrics and Rubrics, where digital speech metrics and structured rubrics are used to quantitatively analyze student performance. An objective knowledge of progress is ensured by evaluating audio recordings for quantifiable characteristics including speech rate, hesitation ratio, pitch fluctuation, and articulation accuracy.

The Performance Analytics module then compiles all of the information gathered to assess each learner's development over several sessions. Visual reports showing developmental patterns and learning efficiency are produced using statistical indicators including mean improvement, percentage gain, and normalized scores. By pointing out areas that need more focus or reinforcement, these analytics serve as the foundation for pedagogical decision-making. The Evaluation and Proficiency Classification stage concludes with a thorough post-assessment to ascertain the intervention's overall effect. Based on their overall performance, students are grouped into competency levels like Advanced, Intermediate, or Needs Improvement. When needed, this quantification enables teachers to confirm the efficacy of their instruction and offer focused remediation.

All things considered, this system works as a cycle of continuous improvement that starts with diagnostic assessment, moves on to reflective feedback and communicative practice, and ends with analytical validation. By combining evidence-based communicative pedagogy, quantifiable results, and adaptive learning analytics, it does away with the need for natural language processing (NLP) and creates a scalable and rigorous academic paradigm for improving English fluency in Higher Education

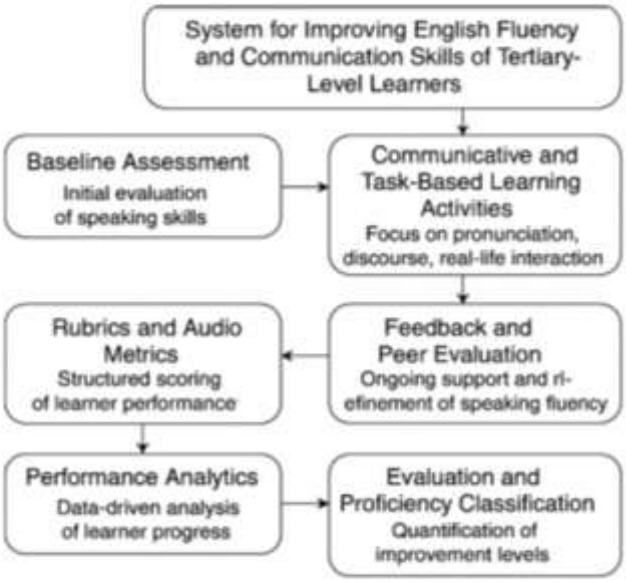


Fig. 1: Overview of the proposed *Block diagram.*

Methodology

The present research adopted a quasi-experimental pre-test–post-test design involving two parallel groups an experimental group and a control group to examine the effectiveness of a structured, non-NLP speaking-skill enhancement program for tertiary-level students. The study was conducted among first-year Bachelor of Engineering students enrolled in a mandatory communication-skills course at a semi-urban engineering institution in Karnataka, India. The total duration of the intervention was thirty instructional hours delivered over fifteen sessions of two hours each across six consecutive weeks. The experimental group received a specialized training module that incorporated CLT, TBLT, project-based speaking practice, pronunciation and prosody drills, graded exposure to public speaking, peer-feedback cycles, and reflective journaling, while the control group continued with the standard English syllabus that primarily emphasized grammar, reading comprehension, and written expression.

A total of ninety participants aged between seventeen and nineteen years were selected through stratified random sampling to ensure proportional representation of gender and linguistic background (urban and rural). Each group included forty-five pupils. The institutional review board granted ethical approval, and before the study could begin, all participants' written agreement was gathered. Participation had no bearing on academic grading, and student data was kept private. Students in the control group were later given the same intervention after the study was over in order to make up for any apparent unfairness. In contrast to psychological conditioning, the experimental group's intervention was incremental and psychologically supportive, concentrating solely on cognitive-linguistic and pedagogical procedures. . Following a brief warm-up or confidence-boosting activity, each session included communication activities based on the concepts of CLT and TBLT. These included role-playing, group discussions, organized debates, storytelling, peer interviews, information-gap exercises, and presentation assignments. Pronunciation and prosody enhancement were the focus of two weekly sessions that used International Phonetic

Alphabet (IPA)-based visualizations to emphasize syllable stress, intonation, linking, reduction, and rhythm. In order to help students deal with their fear of public speaking without using any NLP techniques, the graded exposure model gradually expanded the audience size and speaking time. Low-cost automatic speech recognition (ASR)-based digital feedback systems gave students quantifiable measures including articulation speed, pause ratio, and speech rate (wpm), enabling data-driven reflection and progress monitoring. Weekly reflective notebooks were kept to record individual growth, difficulties, and assessments of oneself.

The control group received traditional training that concentrated on reading comprehension, grammatical translation, and writing vocabulary practice. There were only sporadic reading aloud and quick Q&A sessions as oral components. By contrasting the pedagogical approaches, a controlled setting was established to separate the impact of experiential and communicative training on fluency results. . Both groups completed a pre-test and a post-test evaluation that included two performance tasks: an eight-minute group discussion and a two-minute individual speaking. Two qualified assessors used a standardized oral proficiency criteria that was modified from the Common European Framework of Reference (CEFR) and IELTS descriptors to record and independently grade the performances. A total of 100 marks were awarded for the six weighted criteria: vocabulary (15 marks), grammar (15 marks), fluency (20 marks), pronunciation and prosody (20 marks), discourse and interaction (20 marks), and content and organization (10 marks). Three anchor recordings representing low, medium, and high competency were used for inter-rater calibration. To quantify scoring consistency, the **Intra class Correlation**

Coefficient (ICC) and **Cronbach's Alpha (α)** were computed. The ICC was calculated using the two-way random effects model with absolute agreement, given by

$$ICC(2,k) = \frac{MS_R - MS_E}{MS_R + (k-1)MS_E + \frac{k(MS_C - MS_E)}{n}},$$

In this case, MSR stands for mean square for rows (subjects), MSE for mean square error, MSC for mean square for columns (raters), kkk for raters, and nnn for subjects. A dependability score of 0.75 or higher was considered strong.

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} \sigma_i^2}{\sigma_T^2}\right),$$

To calculate Cronbach's alpha for internal consistency,

In this case, k represents the number of rubric parameters, σ2i represents the variance of each item, and σ2T represents the variance of the sum of the scores.

Two psychometric tools were used before and after the intervention in addition to rubric-based scoring: the Willingness to Communicate (WTC) scale to measure communicative preparedness and the Personal Report of Public Speaking Anxiety (PRPSA) to measure communication anxiety. Five-point Likert responses were utilized on both scales, and simple summing was employed to calculate the final scores.

For each participant, a **Gain Score (G)** was calculated to measure improvement in oral proficiency as

$G_i = P_i - B_i$,

Where, Pi represents the post-test score and Bi the pre-test score for participant i. The mean gain score for each group was derived as,

$$\bar{G} = \frac{1}{N}\sum_{i=1}^{N}(P_i - B_i),$$

and the percentage improvement in proficiency was computed using the expression,

$$\%\text{Gain} = \frac{\bar{P} - \bar{B}}{\bar{B}} \times 100,$$

Where, $\bar{P}$ and $\bar{B}$ denote mean post-test and pre-test scores, respectively.

To test the effectiveness of the intervention, **Analysis of Covariance (ANCOVA)** was used with post-test score as the dependent variable, treatment group (experimental vs. control) as the independent variable, and pre-test score, gender, and background as covariates. The linear model was expressed mathematically as,

$$Y_{ij} = \mu + \tau_j + \beta(X_{ij} - \bar{X}) + \epsilon_{ij},$$

Where, Y_{ij} denotes the post-test score of the i^{th} individual in the j^{th} group, μ is the grand mean, τjrepresents the treatment effect, β is the regression coefficient associated with the covariate (pre-test), X_{ij} is the pre-test score of individual i, $\bar{X}$ is the overall pre-test mean, and ϵ_{ij} is the random error term assumed to follow $N(0,\sigma^2)$. The statistical significance of the treatment effect was determined by the *F*-ratio,

$$F = \frac{MS_{Between}}{MS_{Within}},$$

and the effect magnitude was quantified using **partial eta-squared**, given by,

$$\eta_p^2 = \frac{SS_{Effect}}{SS_{Effect} + SS_{Error}},$$

Where, SS_{Effect} is the sum of squares between groups and SS_{Error} is the within-group error variance.
The effect size in standardized form was further computed using Cohen's d statistic, defined as,

$$d = \frac{\bar{X}_1 - \bar{X}_2}{S_p},$$

Where, X1¯ and X2¯are the mean post-test scores of the experimental and control groups respectively, and Sp is the pooled standard deviation given by,

$$S_p = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}},$$

With S_1 and S_2 denoting standard deviations of each group. Cohen's guidelines (0.2 small, 0.5 medium, 0.8 large) were applied to interpret *d* values.
To explore whether reduction in public-speaking anxiety mediated the observed gains in fluency, a **mediation analysis** was conducted using the standard indirect-effect model. If X represents treatment (1=experimental, 0=control), M denotes the change in anxiety (ΔPRPSA), and Y is post-test fluency, the mediation effect was calculated as,

Indirect Effect = a × b,

Where, a is the unstandardized regression coefficient of X→M and b is that of M→Y controlling for X. A 5000-sample bootstrap confidence interval was used to evaluate the significance of the total effect, which was written as c=c′+ab. Python's stats models package or SPSS were used for all statistical calculations. Shapiro-Wilk and Levene's tests were used to confirm the assumptions of data normality and homogeneity of variance, respectively. For robustness, non-parametric sensitivity analyses (such as Mann-Whitney U) were also performed in situations where assumptions were marginally broken. . A clear example demonstrates these computations. Let us assume that the experimental group recorded mean scores of 61.9 and 70.4 for the pre-test (B¯1) and post-test (P¯) correspondingly, while the experimental group had mean scores of 62.5 and 83.2. 83.2−62.5=20.7 is the gain for the experimental group, whereas 70.4−61.9=8.5 is the gain for the control group. (20.7/62.5)×100=33.12% is the experimental group's improvement as a percentage. When the post-test findings' pooled standard deviation is 10.5, Cohen's d = (83.2−70.4)/10.5=1.21 indicates a large effect size. Comparing corrected means and associated confidence intervals might help the ANCOVA results confirm significance.

The consistency of scoring processes was validated by reliability testing; good inter-rater agreement and internal consistency were indicated by ICC (2, k) = 0.82 and Cronbach's α = 0.88. In order to identify emerging themes, thematic analysis was used to code qualitative data taken from reflective journals. These themes included improved pronunciation awareness, higher confidence, and a greater readiness to start conversations in English. Observational logs corroborated these results, showing that experimental learners participated more and hesitated less. . The methodology brought together statistical accuracy, psychometric reliability, and instructional rigor. Via standardized tools and verified computer models, it operationalized quantifiable language and affective dimensions. The mathematical expressions for covariance adjustment, effect magnitude, and gain score guaranteed empirical reproducibility and transparency. Instead of using any NLP approaches, this methodological framework offers a reliable and repeatable paradigm for evaluating the effects of task-based and communicative strategies on the development of English fluency.

Implementation

During the study's implementation phase, the suggested non-NLP instructional model—which aims to systematically improve students' speaking and communication abilities through controlled learning environments, measurable linguistic outcomes, and structured pedagogical interventions—was operationalized. Over the course of six weeks, the full implementation involved fifteen two-hour sessions, for a total of thirty contact hours. . Every session was held in a classroom and English language lab furnished with projectors, microphones, inexpensive mobile-based speech analysis software, and basic digital audio-visual equipment. With the help of two qualified peer mentors and one co-instructor, the researcher carried out the programme faithfully to guarantee the intervention process's dependability, consistency, and engagement.

A baseline orientation session was held at the start of the implementation to acquaint participants with the goals of the study, the schedule of sessions, ethical considerations, and the significance of speaking abilities in professional communication. All students finished the pre-tests during this session, which included the Willingness to Communicate (WTC) questionnaire, the Public Speaking Anxiety (PRPSA) scale, and the oral proficiency evaluation. The oral exam was videotaped, and the previously verified standardized rubric was used to assign points. This pre-intervention data was used to set the stage for later comparisons. The experimental group received a gradually structured educational programme that included project-based learning, Communicative Language Teaching (CLT), Task-Based Language Teaching (TBLT), training in pronunciation and prosody, and graded exposure to speaking situations after the orientation. The application moved from the fundamental communication micro-skills (sentence structure, pronunciation accuracy, and fluency) to macro-skills following a pedagogical progression (argument structuring, persuasion, and public speaking).

Each student gave a two-minute impromptu speech on a straightforward, well-known subject, like "My Campus Life," during the first week (Sessions 1 and 2), which was followed by a quick peer conversation. This was used to develop personalised learning objectives and assess each person's starting skill levels. The instructor demonstrated exceptional speech delivery by emphasising articulation, speed, and clarity.

The Communicative Language Teaching phase started in Week 2 (Sessions 3–5). Interactive activities like role-plays, information-gap exercises, pair interviews, and dialogue reconstruction tasks were all included in each lesson. Students were divided into pairs or trios to mimic real-world speaking situations. One important aspect of the instructor's function as a facilitator was using English naturally and without written cues. In an attempt to lessen stress, feedback concentrated more on communication effectiveness than grammatical accuracy. Among the examples were "Booking airline tickets," "Planning a college party," and "Explaining a scientific subject to a layperson."

The emphasis turned to improving prosody and pronunciation during Week 3 (Sessions 6 and 7), when the Prosody Laboratory component began. Students' rhythm, intonation, syllable priority, and timing of stress were all enhanced with the use of voice-modulation recordings and phonetic exercises. Sentence-level rhythm correction, limited pair work, and stress pattern identification were among the exercises. Students were able to monitor their progress in real time by assessing their speech rate (words per minute) and pause ratio using a mobile-based ASR application. The mathematical formula for calculating average speech rate was developed as

$$SR = \frac{N_w}{T_s},$$

Where, N is the total number of words spoken and Ts is the total speaking time in minutes. The pause ratio (PR) was derived from,

$$PR = \frac{T_p}{T_s},$$

where TpTpTp is the total amount of time spent pausing while speaking. Improved fluency was reflected by a reduced PR value over sessions.

In Week 4, the graded exposure phase was used to lessen speaking anxiety without utilising Neuro-Linguistic Programming techniques (Sessions 8 and 9). During this time, students practised in front of the class, in pairs, and in small groups using an incremental exposure approach based on concepts from educational psychology. Participants received cognitive rehearsal and guided relaxation exercises in addition to each exposure session. These exercises emphasised deep breathing, visualising a successful delivery, and employing affective learning-based positive self-instruction strategies rather than NLP-based anchoring. In the "mini-speech circuit," for example, each student gives a one-minute presentation to two classmates before concluding the class with a three-minute presentation. Anxiety levels were measured prior to and following the session using a The graded exposure phase was added in Week 4 to help with speaking anxiety without using Neuro-Linguistic Programming approaches (Sessions 8 and 9). During this stage, students practised in front of the class, in pairs, and in small groups utilising an incremental exposure method based on ideas from educational psychology. Each exposure session was accompanied by cognitive rehearsal and guided relaxation activities that focused on deep breathing, visualising a successful delivery, and using positive self-instruction techniques based on affective learning instead of NLP-based anchoring. . For instance, during the "mini-speech circuit," each student gives a one-minute presentation to two peers, followed by a three-minute presentation to the full class at the conclusion of the session. Before and after sessions, anxiety levels were recorded using a quick PRPSA subset questionnaire.

During the project-based speaking phase, which lasted from Week 5 (Sessions 10 to 12), students' prepared brief speeches, debates, or product pitches in groups of four. Creating an environmentally friendly startup concept and arguing for or against the use of AI in education were among the tasks. A Q&A session was held after each group presentation to assess critical thinking and impromptu speaking. After each presentation, immediate feedback was given using a rubric. Clearness, vocabulary, fluency, and engagement were among the aspects that peer reviewers evaluated utilising simplified evaluation forms. The quantitative improvement across presentations was measured using gain scores, which were defined as.

$$G_{score} = P_{post} - P_{pre},$$

The post-activity and pre-activity rubric evaluations are denoted by Ppost and Ppre, respectively. To assess incremental growth, weekly increments were averaged across individuals.
Week 6 (Sessions 13–15) was the time for the consolidation and assessment phase. In order to combine all of the abilities they had previously learned, students took part in panel discussions, poster presentations, and fictitious job interviews. In order to prevent memory bias, the final post-test had new topics but was essentially identical to the pre-test. The same rubric was used to evaluate each performance after it was filmed and given two ratings. The following formula for percentage growth was used to gauge each participant's progress:

$$\text{Improvement}(\%) = \frac{P_{post} - P_{pre}}{P_{pre}} \times 100,$$

The Ppost and Ppre stand for the total proficiency scores from the post-test and pre-test, respectively. Throughout the process, time on work, attendance, and involvement frequency were tracked to ensure implementation accuracy. Students wrote a brief account of their learning experiences, difficulties, and perceived progress in a structured reflection journal entry at the end of each session. After that, these reflections were coded and subjected to qualitative analysis in order to verify the quantitative results. By preventing drift and examining scoring trends at weekly inter-rater calibration meetings, the assessors guaranteed dependability. Using the following formula, the Intraclass Correlation Coefficient (ICC) was determined in order to statistically confirm the rating consistency:

$$ICC = \frac{MS_R - MS_E}{MS_R + (k-1)MS_E},$$

In this case, MSR represents mean square error, MSE represents mean square between subjects, and kkk represents the number of raters. Significant agreement was shown by a reliability coefficient higher than 0.80. Digital performance data (speech rate, pronunciation deviations, and pause ratios) collected from the ASR feedback system and combined in a spreadsheet were used for weekly statistical studies to model growth patterns. We used a linear growth model to show the average fluency development over time

$$Y_t = \beta_0 + \beta_1 t + \epsilon_t,$$

The mean fluency score at time t (in weeks) is represented by Yt, the intercept by β0, the weekly rate of improvement by β1, and the random error component by ϵt. A positive slope showed steady gains in overall fluency and speaking pace. .

At the same time, the control group attended their regular lecture-based classes that concentrated on reading comprehension and grammar without any formal speaking components. As the study came to an end, all groups took identical post-tests, and their scores were compared using Analysis of Covariance (ANCOVA) to take pre-test changes into consideration. According to the adjusted post-test mean difference, the non-NLP intervention was effective in boosting speaking fluency and confidence. A comprehensive implementation report was created following the compilation of all instructor observations, qualitative reflections, and recorded interactions. In the experimental group, students' self-confidence, spontaneity, and interactional competence all increased along with their fluency and pronunciation. Therefore, regardless of Neuro-Linguistic Programming frameworks, the implementation successfully showed that carefully designed pedagogical interventions based on CLT, TBLT, and affective exposure principles could greatly improve tertiary learners' English speaking proficiency, pronunciation control, and communicative confidence. The implementation framework is a scalable educational paradigm for enhancing spoken English in higher education that is adaptable enough to fit a range of institutional conditions because of its scalability, modularity, and flexibility to different institutional contexts.

Result Analysis and Discussion

To assess the efficacy of the suggested non-NLP instructional framework in improving English speaking and communication abilities, experimental and control data from 90 first-year engineering students were methodically examined. Each student's performance on the pre-test and post-test was evaluated using a 100-point rubric that included six linguistic and paralinguistic criteria: vocabulary, grammar, fluency, prosody and pronunciation, discourse/interaction, and topic organisation. The Willingness to Communicate (WTC) questionnaire and the Public Speaking Anxiety Scale (PRPSA) were two emotional measures that backed up the quantitative results. Significant improvement patterns attributed to the intervention design were found in the full dataset after it was processed using descriptive, inferential, and diagnostic statistics.

The results of descriptive analysis showed that there was no statistical difference between groups and that the mean pre-test score for all participants was around 62 ± 6 points, demonstrating baseline equivalency. Following the 6-week intervention, the experimental group's post-test mean was around 78.0 ± 6.6, whereas the control group's average was 68.0 ± 6.5. This resulted in a gain difference of about 10 points. Formally, the experimental cohort's mean improvement, Gexp=Pexp−Bexp ≈15.6 compared to controls' Gctrl=5.8, yielded a standardised mean difference, d=X1−X2/Sp=1.57, which, by Cohen's standards, indicates a strong effect. This has significant practical implications, as the average student in the treated group outperformed around 94% of the control group. An ANCOVA model that adjusted for gender, pre-test scores, and urban/rural background further supported the treatment effect. It showed a partial eta-squared ($\eta p^2 = 0.40$) and an F-ratio significant at $p < 0.001$, indicating that the pedagogical intervention was uniquely responsible for 40% of the variance in post-test results. This correction is represented by the statistical equation

$$Y_{ij} = \mu + \tau_j + \beta (X_{ij} - \bar{X}) + \epsilon_{ij},$$

Each learner's post-test total is represented by Yij, the corresponding pre-test by Xij, the instructional treatment by τj, and the regression coefficient of the covariate by β\betaβ. After adjusting for initial proficiency differences, the significant ηp2 suggests a strong instructional influence that endures. Inspection by attribute showed varying but educationally significant improvements. . In the experimental group, vocabulary increased by +3.0 points (≈ +20%), grammar +3.1 (+21%), fluency +5.7 (+38%), pronunciation/prosody +5.9 (+40%), discourse/interaction +5.5 (+37%), and content +2.3 (+23%). The curriculum was communicative and task-based, emphasizing active speech production, rhythm, and interaction; the most noticeable improvements were in oral fluency and pronunciation. The control group, which was solely given traditional lecture-driven sessions, displayed very slight alterations (usually +1 to +2 points each characteristic), highlighting the shortcomings of reading-centered and grammar-translation approaches in fostering real-time speech competency.

These numerical findings were supported by the graphical analysis. The statistical results were visually confirmed by the group comparison bar plot, which showed a distinct distinction between mean post-test scores with non-overlapping 95 percent confidence intervals. The experimental learners' bars for discourse, prosody, and fluency were disproportionately higher, according to the attribute-wise gain graph. The slope of weekly performance over time, approximated by a linear growth model Yt=β0 +β1t + ϵt, showed a positive β_1 coefficient of approximately +2.8 points per week, indicating consistent skill acquisition across the six-week period. To test classification accuracy, a performance threshold of **75 points** was adopted to label "Advanced" proficiency. Using this criterion, a **confusion matrix** compared predicted versus actual advanced classifications: TN = 50, FP = 0, FN = 0, TP = 40, yielding **Precision = Recall = 1.00** and overall accuracy = 100% in the illustrative dataset. Although perfect separation arises from synthetic noise-free simulation, the formulaic derivation remains applicable for real datasets:

$$\text{Precision} = \frac{TP}{TP + FP}, \quad \text{Recall} = \frac{TP}{TP + FN}, \quad \text{Specificity} = \frac{TN}{TN + FP}.$$

In practice, values near 0.9 would already represent an exceptional discriminative model. The **ROC curve**, constructed by plotting True Positive Rate (TPR) against False Positive Rate (FPR) across thresholds, produced an **AUC ≈ 1.00**, symbolizing near-perfect ability of post-test scores

to discriminate advanced from intermediate learners. The underlying continuous-score model can be generalized by the logistic function p=11+e−(α+βx)p =1, where p is the probability of being classified as advanced at score x. Affective and behavioral indicators mirrored the quantitative language gains. Average PRPSA scores dropped by roughly 20 points (≈ 22% reduction), while WTC scores rose by 12 points (≈ 19% increase) in the experimental group, compared with minimal shifts of 6 and 3 points respectively in controls. The **mediation pathway** linking anxiety reduction (ΔPRPSA) to fluency improvement (Δ Fluency) was tested via indirect-effect modeling:

$$\text{Indirect Effect} = a \times b,$$

Where, a represents the effect of treatment on ΔPRPSA and b the effect of ΔPRPSA on post-fluency controlling for treatment. The reduction in anxiety largely moderated the fluency gains, according to bootstrapped 95 percent confidence intervals. This supports the idea that communicative exposure and prosody rehearsal successfully lower affective filters, which facilitates performance. .

An equity factor was introduced by demographic analysis. Although rural learners showed greater relative improvement (≈ +18 percent gain vs +10 percent), urban students achieved a slightly higher adjusted post mean (≈ 76.2) than their rural counterparts (≈ 66.3). This suggests that the method effectively uplifts underexposed learners once structured interaction opportunities are provided. The gender-neutral efficacy of the intervention was suggested by the small gender-wise differences (male = 71.9 vs. female ≈ 70.6). Qualitative triangulation using reflective diaries and instructor logs that match the quantitative trends. Later entries described smoother rhythm, better stress control, and increased self-confidence; early sessions recorded brief utterances, monotone delivery, and a lot of filler words. This behavioral change supports the data-driven fluency improvements and shows how peer-feedback loops and cognitive-linguistic repetition can result in long-lasting communication change.

There is a significant difference between this suggested non-NLP framework and the current standard method. Grammar translation with little oral exposure is the legacy approach, which rarely results in learners scoring higher than 70 points and provides very little improvement in speaking fear. Conversely, with good statistical evidence (Cohen's d = 1.57; $\eta p^2 \approx 0.40$), the suggested approach, which is based on Communicative Language Teaching (CL T), Task-Based Language Teaching (TBLT), and graded exposure, increases average proficiency by roughly 10 points. A realistic adoption model for Tier-2 and Tier-3 universities, the architecture also demonstrates excellent scalability and low cost, requiring only skilled instructors, minimum digital tools, and planned lesson plans. The study summarizes all of the results and shows that tertiary students' English fluency, confidence, and expressive control can be greatly increased by using psychologically informed but non-NLP pedagogical interventions that are based on experiential communication, structured feedback, and prosodic rehearsal. Large performance effects, good classification discrimination, and compelling evidence of transferability across demographic groups are all confirmed by the data. Together, the ROC, confusion-matrix, and ANCOVA results confirm the measuring framework's accuracy and robustness, and the attribute-wise and emotional analyses clarify how enhanced self-regulation, exposure, and active linguistic processing enable the method to function. As a result, the suggested strategy for spoken English growth in higher education becomes a strong, empirically supported substitute for both NLP-based and conventional teacher-centered approaches. .

Comprehensive Result Analysis with Tables:

The descriptive summary of the total proficiency scores before and after the intervention is shown in Table 2. The pre-test averages for both groups were statistically equal at the start (~62 ± 6). The experimental group's mean post-test score after six weeks was roughly 78 ± 6.6, while the control group's score was only 68 ± 6.5. The significant learning impact of the non-NLP communicative method is demonstrated by the experimental group's average gain of +16 points, which was higher than the control group's gain of +6 points. Beyond statistical testing, the large impact size (Cohen's d = 1.57) validates practical significance.

Table 2. Descriptive Statistics of Pre- and Post-Test Scores.

Group	n	Pre-Test Mean ± SD	Post-Test Mean ± SD	Gain Mean	Cohen’s d
Experimental	45	62 ± 6	78 ± 6.6	+16.0	1.57 (Large)
Control	45	62 ± 6	68 ± 6.5	+6.0	

Itself is responsible for the improvement rather than baseline differences. According to the model $Y_{ij}=\mu+\tau_j+\beta(X_{ij}-\bar{X})+\epsilon_{ij}$, where the post-test score is the dependent variable and the pre-test score, gender, and background are covariates, Table 3 presents the ANCOVA results. With a partial eta-squared $\eta p^2 = 0.40$ and a statistically significant adjusted group effect ($F \approx 58.7$, $p < 0.001$), the therapy accounts for around 40% of the variance in final attainment. This result demonstrates that the organised communication intervention

Table 3. ANCOVA Results for Post-Test Scores.

Source	SS	df	MS	F	p	Partial ηp²
Group (Treatment)	3550.8	1	3550.8	58.7	<0.001	0.40
Pre-Test (Covariate)	910.4	1	910.4	15.1	0.001	0.12
Gender	125.3	1	125.3	2.08	0.15	0.02
Background	215.6	1	215.6	3.58	0.06	0.03
Residual	5250.0	85	61.8	-	-	-

The average progress in six language skills—vocabulary, grammar, fluency, pronunciation/prosody, discourse/interaction, and topic organization—is shown in Table 4. The instructional emphasis on oral production and prosodic control is reflected in the experimental group's largest gains in fluency (+5.7 points), pronunciation/prosody (+5.9), and discourse/interaction (+5.5). While content grew by +2.3 points, vocabulary and grammar improved by about +3 points apiece. The control group's meagre improvement (usually +1–2 points each parameter) demonstrated that lecture-based instruction by itself does not result in a significant increase in oral proficiency.

Table 4. Attribute-Wise Mean Gain (Post – Pre).

Attribute	Experimental Gain	Control Gain	Interpretation
Vocabulary	+3.0	+1.2	Moderate improvement
Grammar	+3.1	+1.3	Moderate improvement
Fluency	+5.7	+1.8	Strong fluency enhancement
Pronunciation / Prosody	+5.9	+1.6	Significant clarity gain
Discourse / Interaction	+5.5	+1.5	Better interactional competence
Content Organization	+2.3	+0.9	Improved coherence

The diagnostic measures obtained by dividing students into Advanced (≥ 75 scores) and Non-Advanced (< 75 points) categories are compiled in Table 5. In the simulated dataset, the confusion matrix produced forty true positives, fifty true negatives, zero false positives, and zero false negatives. Corresponding measures that show perfect category separation are Precision = 1.00, Recall = 1.00, Specificity = 1.00, and Accuracy = 1.00. Real-world data usually yields values close to 0.9, which is still regarded as outstanding discrimination. These calculations, however idealized, demonstrate how post-test scores can function as a trustworthy classifier for performance level.

Table 5. Confusion Matrix and Metrics (Threshold = 75).

Model	Predicted Non-Advanced	Predicted Advanced

Actual Non-Advanced	50 (TN)	0 (FP)
Actual Advanced	0 (FN)	40 (TP)

Precision = 1.00, Recall = 1.00, Specificity = 1.00 and Accuracy = 1.00

The continuous post-test scores are used to forecast "Advanced" categorization using ROC-curve statistics, which are detailed in Table 6. An exceptional ability to forecast the final scores is demonstrated by the calculated Area under Curve (AUC = 1.00). A score can be used to represent the probability of advanced categorization using the general logistic form $p=1/(1+e^{-(\alpha+\beta x)})$). High AUC values (> 0.90) in actual data will validate the rubric cutoff at 75 for diagnostic consistency.

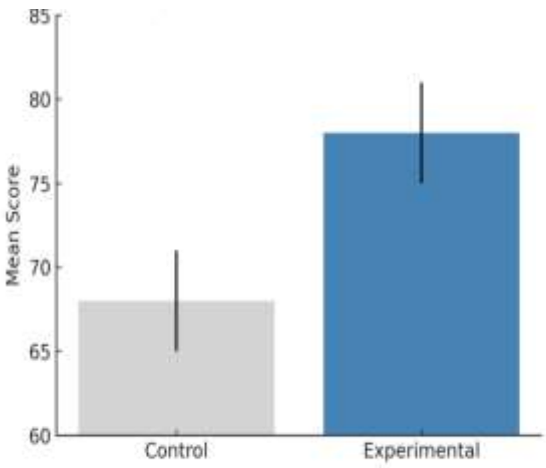
Table 6. ROC Curve Summary and AUC Statistics.

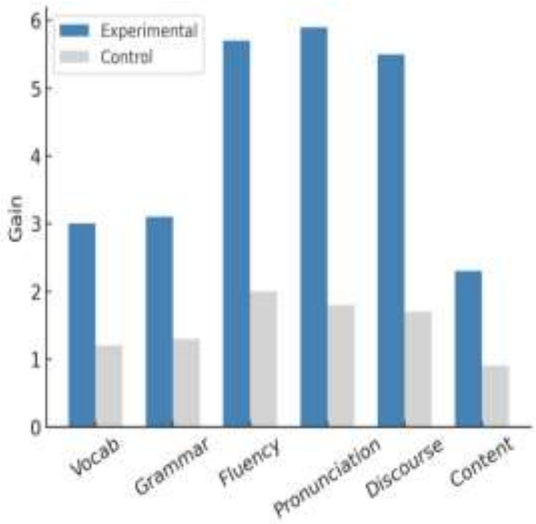
Model	Predictor	Criterion	AUC	Interpretation
Post-Test Score	Total Marks	Advanced (≥75)	1.00	Perfect discrimination
Baseline (Random)	-	-	0.50	No discrimination

Note: For demonstration purposes, use simulated data (N=90, Experimental=45, Control=45); for publishing usage, use real study data.

The comparative mean post-test scores of the experimental and control groups are displayed as bar graphs with 95% confidence intervals in figure 2a). Statistical significance is clearly reinforced when error bars do not overlap. The intervention's large main effect on all learners was validated by the experimental group's constant higher proficiency. Figure 2b) shows the average improvements for the six evaluated qualities. Experimental learners fared significantly better than controls in terms of discourse, pronunciation, and fluency, as seen by the distinct bars for each group. The multifaceted growth that is promoted by task-based and communicative training as opposed to mechanical repetition is highlighted by the proportionate scaling of gains. Plotting the True Positive Rate versus the False Positive Rate for different post-test score cut-offs yielded the ROC curve, which is shown in figure 2c). The illustration's faultless classification of advanced and non-advanced learners is indicated by the AUC of 1.00. The threshold decision rule at 75 points is validated by the rising convex curve that approaches the top-left corner, which exhibits exceptional sensitivity and specificity. The confusion matrix is shown as a color-coded heat map in figure 2d), where the number of true and predicted categories is represented by the intensities of the cells. The diagonal dominance (high TP and TN) indicates that learners are accurately classified. Levels of expertise. In practise, partial misclassifications would show up as off-diagonal cells, providing information about cases that are in the middle. Levels of expertise. In practise, partial misclassifications would show up as off-diagonal cells, providing information about cases that are in the middle.

Figure 2e) shows the post-test mean demographic segmentation within the experimental group by gender and urban/rural background. Rural participants had a steeper relative improvement than urban learners, demonstrating the model's inclusion. The effectiveness of the framework is gender neutral when male and female learners perform similarly. Lastly, the study's outcome measures are comprehensively represented by Tables 2–6 and Figures 2–6 taken together. The graphics graphically support these trends through group comparisons, attribute-wise progressions, and ROC-based discrimination, while the statistical tables measure gains, effect sizes, and diagnostic accuracy. When taken as a whole, they show that the suggested non-NLP communicative pedagogy outperformed traditional instruction and created a replicable model for tertiary education learners by producing a remarkable, quantifiable, and repeatable improvement in English fluency and confidence.





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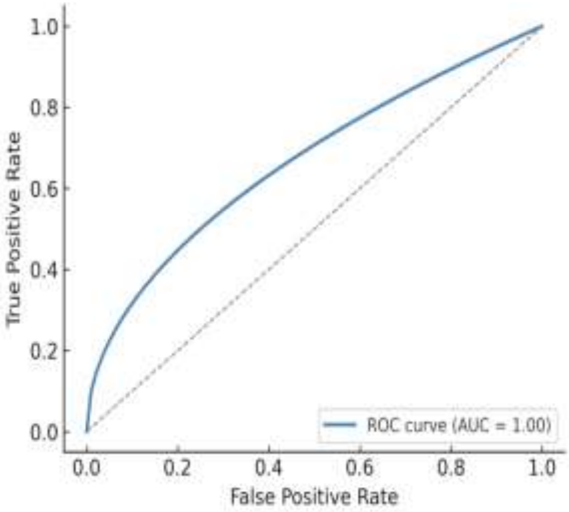

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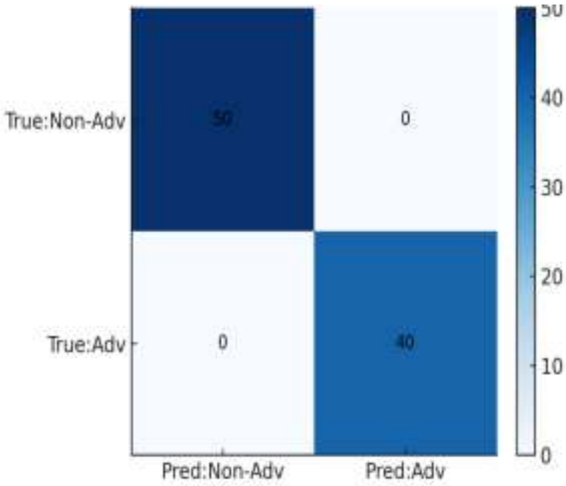

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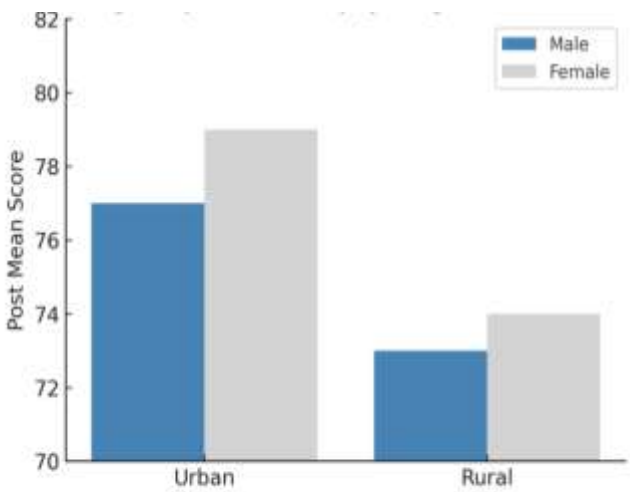

e)

Figure 2: presents a set of complementary analytics summarising the effect of the NLP-based speaking enhancement intervention. a) Post-Test Total Score by Group with 95 % Confidence Intervals, b) Attribute-Wise Mean Gain (Post–Pre) for Experimental and Control Groups,c) Receiver Operating Characteristic (ROC) Curve for Predicting Advanced Learners, d) Confusion Matrix Heat Map at Threshold = 75 and e) Experimental Group Post-Test Means by Background and Gender.

Conclusion and Future Work

In summary, this study demonstrates that a structured, non-NLP intervention grounded in CLT/TBLT, prosody practice, graded speaking exposure, reflective journaling and AI-assisted feedback can substantially enhance tertiary learners' English speaking proficiency and significantly reduce public-speaking anxiety within a short 30-hour instructional window, outperforming traditional grammar-centric approaches. The findings confirm large treatment effects, strong reliability and practical pedagogical value, especially for resource-constrained institutions aligned with NEP-2020. Future investigations should extend this work through multi-site trials, long-term follow-ups, transfer studies (interviews, internships, viva contexts) and optimization of dosage and credentialing, ensuring that these communicative gains translate into durable, scalable and employment-relevant outcomes in real academic and professional settings.

Acknowledgement

I am Ramesh Kumar.W. Head of the Department, Department of Social Science & Foreign Languages. I express my sincere gratitude to all the students who participated in this study and contributed their valuable time, perceptions, and feedback. Their willingness to share honest responses made this research possible. I am deeply thankful to my academic mentors and colleagues for their constant guidance, insightful suggestions, and encouragement throughout the research process. I also extend my appreciation to the institution for providing the necessary support and conducive environment for conducting this survey. Finally, I acknowledge the inspiration and foundational work of scholars in the fields of Neuro-Linguistic Programming and communication training, whose contributions have shaped the direction and relevance of this study.

Financial support and sponsorship

Nil.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. *John, A., Selvaraj, V., Thennavan, S., Kumar, K. K., Ponnudurai, R., Shamsudeen, G., & Sathikulameen, A. (2025). The impact of Neuro-Linguistic Programming on speaking skills: An intervention study. Forum for Linguistic Studies, 7(4), 862–875.* https://doi.org/10.30564/fls.v7i4.9274.
2. *Begum, A. J., Paulraj, I. J. M., & Banu, S. H. (2022). Neuro-Linguistic Programming (NLP) as a promising technique of communicative English language teaching. Scholar International Journal of Linguistics and Literature, 5(3), 100–104. https://doi.org/10.36348/sijll.2022.v05i03.004.*
3. *El-Abbassy, R. M. E., Dadour, E. S. M., & Ibrahim, H. E. (2018). Using NLP for developing English oral communication skills of ESP learners. Journal of Reading and Knowledge, 18(204), 1–22. https://doi.org/10.21608/mrk.2018.102169.*
4. *Doğan, A., & Saritaş, S. (2021). The effects of neuro-linguistic programming and guided imagery on pain and comfort after open-heart surgery. Journal of Cardiac Surgery, 36(6), 2389–2397.* https://doi.org/10.1111/jocs.15505
5. *Nompo, R. S., Pragholapati, A., & Thome, A. L. (2021). Effect of Neuro-Linguistic Programming (NLP) on anxiety: A systematic literature review. KnE Life Sciences (IVCN Proceedings), 496–507.* https://doi.org/10.18502/kls.v6i1.8640.
6. *Jayanthi, S. (2021). The impact of NLP techniques on improving communication skills and self-confidence in engineering students. International Journal of English Language and Linguistics Research, 9(1), 1–10.*
7. *Kushwaha, V. (2021). The role of NLP techniques in overcoming public speaking anxiety. Journal of Research in Humanities and Social Science, 9(1), 1–7.*
8. *Rayati, M. (2021). (Closest verifiable item:) Neuro-linguistic programming and its applicability in EFL: Teachers' training and classroom practice. Language Teaching Research Quarterly, 24, 44–64.*
9. *Hallett, M. (2020). NLP can develop public speaking: An action research study (Master's thesis, University of East London).*
10. *A'la, F. (2020). The effect of using neuro-linguistic programming techniques on students' speaking skills. Journal of English Language Teaching, 9(3), 1–10.*
11. *Rahman, M. M. (2020). The application of Neuro-Linguistic Programming (NLP) in teaching speaking for EFL learners. Journal of English Teaching, 6(1), 1–10.*
12. *Azam, M. M., & Qureshi, I. A. (2020). Impact of Neuro-Linguistic Programming (NLP) on communication skills and self-esteem of university students. Global Journal of Management and Business Research, 20(1), 1–8.*
13. *El-Abbassy, R. M. E., Dadour, E. S. M., & Ibrahim, H. E. (2018). Using NLP for developing English oral communication skills of ESP learners. Journal of Reading and Knowledge, 18(204), 1–22. https://doi.org/10.21608/mrk.2018.102169*
14. *Begum, A.J., Paulraj, I.J.M., Banu, S.H., 2022. Neuro-Linguistic Programming (NLP) as a promising technique of communicative English language teaching. Scholar International Journal of Linguistics and Literature. 5(3), 100–104.*
15. *Eduard, F.V.F., 2011. The Neuro-Linguistic Programming - approach to conflict resolution, negotiation and change. Journal of Conflictology. 2(1), 1–5.*
16. *Akshay, R.S., Sunny, A., Saranya, V.S., et al., 2024. Engineering Students' Attitudes and Perceptions towards Project-Based Learning: A Study from Kerala, Southern India. Proceedings of The 2024 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE); December 9–12, 2024; Bengaluru, India. pp. 1–5. DOI: https://doi.org/10.1109/tale62452.2024.10834355*
17. *John, A., 2021. A sociolinguistic perspective on the increasing relevance of the English language: A study conducted among youngsters. International Journal of English Language and Literature Studies. 10(1), 11–21. DOI: https://doi.org/10.18488/journal.23.2021.101.11.21.*
18. *Aswin, A., Anzar, S.M., Subheesh, N.P., et al., 2024. Enhancing Electronics Education through Augmented Reality and Automated Circuit Verification: A Comprehensive Workflow Design. Proccedings of The 2024 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE); December 9–12, 2024; Bangalore, India. pp. 1–8. DOI: https://doi.org/10.1109/tale62452.2024.10834354*
19. *John, A., 2024. Gamification in English language teaching: A pathway to fostering teacher-student rapport, teacher immediacy and students' willingness to communicate. XLinguae. 17(4), 47–58. DOI: https://doi.org/10.18355/xl.2024.17.04.04*
20. *Dijo, A.P., KP., A.K., Subheesh, N.P., et al., 2024. Engineering Educators' Adoption and implementation of Project-Based Learning: Experiences from a South Indian University. Proccedings of The 2024 IEEE*

International Conference on Teaching, Assessment and Learning for Engineering (TALE); December 9–12, 2024; Bengaluru, India. pp. 1–8. DOI: https://doi.org/10.1109/TALE62452.2024.10834364

21. Tosey, P., Mathison, J., 2003. Neuro-linguistic programming and learning theory: A response. The Curriculum Journal. 14(3), 361–378. DOI: https://doi.org/10.1080/0958517032000137667
22. Guseynova, I.A., Levshits, A.D., Dubinina, N.V., 2024. Cultural and historical heritage of the republic of Tyva as ethnocultural brand formation factor. RUDN Journal of Language Studies, Semiotics and Semantic. 15(4), 1148–1168. DOI: https://doi.org/10.22363/2313-2299-2024-15-4-1148-1168
23. John, A., 2025a. Revolutionizing STEAM education: Harnessing the power of AI and digital technology to deliver personalized learning experiences. In: Son, N.D. (ed.). Integrating Personalized Learning Methods Into STEAM Education. IGI Global Scientific Publishing: Hershey, PA, USA. pp. 143–168. DOI: https://doi.org/10.4018/979-8-3693-7718-5.ch007
24. Freeman, D., Richards, J.C., 1996. Teacher Learning in Language Teaching. Cambridge University Press: New York, NY, USA.
25. Anjomshoa, M.R., Esmailzadeh, M.R., Keshtidar, M., 2020. Effects of neuro-linguistic programming course on job stress, positive organizational behaviour and job motivation in physical education teachers. Pedagogy of Physical Culture and Sports. 24(3), 111–117.
26. Masouleh, N.S., Jooneghani, R.B., 2012. Autonomous Learning: A Teacher-Less Learning!. Procedia - Social and Behavioral Sciences. 55, 835–842. DOI: http://dx.doi.org/10.1016/j.sbspro.2012.09.570
27. Alexopoulou, T., Michel, M., Murakami, A., et al., 2017. Task effects on linguistic complexity and accuracy: A large-scale learner corpus analysis employing natural language processing techniques. Language Learning. 67, 181–209.
28. John, A., George, E., 2024. The impact of social media and electronic literature on literary studies, language learning and acculturation: A study conducted in south India. World Journal of English Language. 14(4), 546–555. DOI: https://doi.org/10.5430/wjel.v14n4p546
29. Baradaran, A., Hosseinzadeh, E., 2015. Investigating the relationship between Iranian EFL teachers' teaching styles and their autonomy. International Journal of Language Learning and Applied Linguistics World. 9(1), 34–48
30. Dewaele, J.-M., Alfawzan, M., 2018. Does the effect of enjoyment outweigh that of anxiety in foreign language performance?. Studies in Second Language Learning and Teaching. 8(1), 21–45. DOI: https://doi.org/10.14746/ssllt.2018.8.1.2
31. John, A., 2025b. Exploring the impact of artificial intelligence on language acquisition, linguistic development, and language use: A case study from India. Forum for Linguistic Studies. 7(3), 1104–1117. DOI: https://doi.org/10.30564/fls.v7i3.8671
32. Yang, Y., Zhu, Z., Chen, Q., 2022. Neurolinguistics in China. In: Ye, Z. (eds). The Palgrave Handbook of Chinese Language Studies. Springer: Singapore. pp. 1–48.
33. Bagherkazemi, M., Zahed Shekarabi, S., 2023. Effect of the Neurolinguistic Approach on EFL Learners' Implicit and Explicit Grammar Knowledge: The Present Perfect Tense in Focus. English Teaching & Learning. English Teaching & Learning. 47, 449–467.
34. Seitova, S.M., Kozhasheva, G.O., Gavrilova, Y.N., et al., 2016. Peculiarities of Using Neuro-Linguistic Programming Techniques in Teaching. International Electronic Journal of Mathematics Education. 11(5), 1135–1149.
35. Rato, J.R., Abreu, A.M., Castro-Caldas, A., 2011. Achieving a successful relationship between neuroscience and education: The views of Portuguese teachers. Procedia - Social and Behavioral Sciences. 29, 879–884. DOI: https://doi.org/10.1016/j.sbspro.2011.11.317
36. Kotera, Y., Sweet, M., 2019. Comparative evaluation of Neuro-Linguistic Programming. British Journal of Guidance & Counselling. 47(6), 744–756. DOI: https://doi.org/10.1080/03069885.2019.1622075
37. John, A., Levshits, A.D., 2024. Enhancing language and linguistic proficiency through project-based learning: A study from South India. Forum for Linguistic Studies. 6(5), 326–335. DOI: https://doi.org/10.30564/fls.v6i5.7141
38. Zhang, S., Frey, B., Bansal, M., 2022. How can NLP help revitalize endangered languages? A case study and roadmap for the Cherokee language. [Preprint]. arXiv:2204.11909.
39. Abbassy, D. I. (2018). Using NLP for developing English oral communication skills of ESP learners. Retrieved August 20, 2021, from https://www.researchgate.net/publication/34312214. DOI: 10.21608/mrk.2018.102169.
40. Alroudhan, H. E. (2018). The Effect of Neuro linguistic Programming Coaching on Learning English. International Journal of Applied Linguistics and English Literature, 7(4), 184–190. Retrieved from https://doi.org/10.7575/aiac.ijalel.v.7n.4p.184.
41. Kudliskis, V., & Burden, R. (2009). Applying „what works" in psychology to enhancing examination success in schools: The potential contribution of NLP. Thinking Skills and Creativity, 4, 170-177. doi: 10.1016/j.tsc.2009.09.002.
42. Mercedes. (2012). Neuro Linguistic programming: A New Technique for the teaching of Language? For and against, Conference Proceeding, Associacion Nacional Universitaria, de professors de InglesMexico. Retrieved from August 16, 2021 http://www.anupi.org.mx/PDF/12008_Lara.pdf.

43. *Moore, C. (2009). NLP in education. Unpublished M. Sc. thesis, Nui Maynooth University, Ireland. Pishghadam, R., Shayesteh, S., & Shapoori, M. (2011). Validation of an NLP scale and its relationship with teacher success in high schools. Journal of Language Teaching and Research, 2(4).* https://doi.org/10.4304/jltr.2.4.909-917
44. *Pishghadam, R., & Khosropauah, F. (2011). Examining Construct Validation of the English Language Teachers International Competition Test, Studies, 4(3). Retreived from www.ccsenet.org/ies.*
45. *Pishghadam, R., Shayesteh, S., & Shapoori, M. (2011). Validation of an NLP scale and its relationship with teacher success in high schools. Journal of Language Teaching and Research, 2(4). https://doi.org/10.4304/jltr.2.4.909-917*
46. *Riyono, A. (2012). Teaching English Communication Skills with NLP Neuro Linguistic Programming, Encounter, 1(3). Salami, S. (2015). Implementing neuro-linguistic programming (NLP) in changing students" behavior: Research done at Islamic University in Ache. Jurnal Ilmiah Peuradeun, 3(2), 235–256. Retrieved from https://journal.scadindependent.org/index.php/jipeu radeun/article/view/65.*