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Technology-Enabled Language Learning and the Naan Mudhalvan Initiative: A Critical Pedagogical Study of English Communication Development among Undergraduate Students

*¹Karthi R and ²Dr. K Ramesh Babu

¹Ph.D. Research Scholar (P.T.), Department of English, Arignar Anna Govt. Arts College, Cheyyar, India.

²Research Supervisor, Associate Professor & Head, Department of English, Arignar Anna Govt. Arts College, Cheyyar, Tamil Nadu, India.

Abstract

The integration of technology into language learning has profoundly altered pedagogical frameworks, particularly in contexts where traditional methods have failed to produce communicatively competent graduates. This paper undertakes a critical and systematic examination of the *Overview of English Communication Skills Course* offered through *Naan Mudhalvan Scheme*, a flagship initiative aimed at enhancing employability and linguistic proficiency among undergraduate students in Tamil Nadu. The study situates the programme within the broader paradigm of Technology-Enabled Language Learning (TELL), interrogating its pedagogical assumptions, implementation strategies, learner engagement, and measurable outcomes.

Drawing upon empirical observations, structured feedback, and theoretical insights from contemporary language acquisition models, this paper evaluates the extent to which technology-mediated instruction contributes to the development of communicative competence. Particular attention is given to rural learners, whose exposure to English remains limited due to socio-economic and linguistic constraints. The study also examines how digital platforms, interactive modules, and AI-assisted learning tools reshape learner autonomy, motivation, and performance.

The findings suggest that while the Naan Mudhalvan initiative represents a significant departure from traditional grammar-centric pedagogy, its success is contingent upon critical variables such as teacher mediation, technological accessibility, and contextual adaptation. The paper argues that technology, when deployed without pedagogical sensitivity, risks becoming an ornamental addition rather than a transformative tool. Conversely, when integrated with principled instructional design, it can bridge longstanding gaps in English language education.

This study advocates for a hybrid pedagogical model that harmonizes technological affordances with humanistic teaching practices, thereby ensuring sustainable and meaningful language learning outcomes.

Keywords: Technology-Enabled Language Learning (TELL), Naan Mudhalvan, English Communication Skills, Undergraduate Education, Digital Pedagogy, Rural Learners, Communicative Competence, AI in Language Learning, Blended Learning, Educational Technology.

1. Introduction

The contemporary educational landscape is witnessing an unprecedented transformation, driven by technological innovation. Language learning has shifted from teacher-led to learner-focused, technology-driven approaches. The emergence of Technology-Enabled Language Learning (TELL) has redefined not only how languages are taught but also how they are acquired, practiced, and internalized.

In the Indian context, and more specifically within Tamil Nadu, the challenge of equipping undergraduate students with effective English communication skills remains acute. Despite years of formal instruction, a considerable proportion of

students, especially those from rural backgrounds, exhibit limited proficiency in spoken and functional English. This deficiency has far-reaching implications, particularly in employability and social mobility.

It is within this context that the *Overview of English Communication Skills Course* offered through *Naan Mudhalvan Scheme* emerges as a strategic intervention. Conceived as a comprehensive skill development initiative, the programme seeks to leverage technology to address systemic shortcomings in language education. However, the mere incorporation of digital tools does not guarantee pedagogical success. What demands scrutiny is the way these tools are

integrated, the theoretical foundations that underpin their use, and the outcomes they produce.

This paper, therefore, aims to critically evaluate the Naan Mudhalvan initiative through the lens of Technology-Enabled Language Learning. It adopts a rigorous academic approach, examining both the promises and limitations of technology in fostering communicative competence among undergraduate learners.

2. Conceptual Framework: Technology-Enabled Language Learning

Technology-Enabled Language Learning (TELL) refers to the use of digital tools, platforms, and resources to facilitate the acquisition of language skills. Unlike earlier models such as Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL), TELL encompasses a broader spectrum of technologies, including mobile applications, artificial intelligence, cloud-based platforms, and interactive multimedia.

At its core, TELL is grounded in several pedagogical principles:

- **Learner Autonomy:** Technology allows learners to control the pace, sequence, and mode of learning.
- **Interactivity:** Digital platforms provide immediate feedback, enhancing engagement and retention.
- **Multimodality:** Language is presented through text, audio, video, and simulation, catering to diverse learning styles.
- **Accessibility:** Learning extends beyond the classroom, enabling continuous practice.

But these theoretical advantages must be critically examined in practice. The effectiveness of TELL depends not merely on the availability of technology but on its pedagogical alignment. Without a coherent instructional design, technology risks becoming a superficial enhancement rather than a substantive improvement.

3. The English Communication Skills Course offered through Naan Mudhalvan Scheme: An Overview

The Naan Mudhalvan initiative is a Tamil Nadu government program designed to improve undergraduate employability by offering essential professional skills, especially in English communication. Within this broader framework, the *Overview of English Language Communication Course* is designed as a structured, technology-enabled programme that integrates digital learning with skill-based pedagogy.

The course reflects a deliberate shift from traditional, teacher-centred methods toward a learner-centred, communicative approach. It prioritizes functional language use over mere grammatical accuracy, thereby aligning with contemporary pedagogical frameworks such as Communicative Language Teaching and Technology-Enabled Language Learning. The primary focus is on developing proficiency across the four macro-skills—listening, speaking, reading, and writing within real-life contexts that mirror academic, social, and workplace interactions.

A defining characteristic of the programme is its integration of digital platforms through a Learning Management System (LMS), which enables students to access learning materials via both mobile and web interfaces. This ensures flexibility and accessibility, particularly for learners from diverse and resource-constrained backgrounds. The course content is delivered through structured modules that incorporate interactive exercises, multimedia resources, and continuous

assessments, thereby promoting active engagement and self-directed learning.

The programme also incorporates AI-driven evaluation feedback mechanisms, which provide learners with immediate responses to their performance. This feature enhances the learning process by enabling students to identify their strengths and areas for improvement in real time. While the programme demonstrates a clear commitment to modernizing language education through technological innovation, its effectiveness must be critically examined. The shift from grammar-focused instruction to communication-oriented learning represents a significant pedagogical advancement. But the crucial question remains whether this transformation leads to measurable improvements in learners' communicative competence.

In this context, the present study seeks to evaluate the impact of the Naan Mudhalvan English Communication Course through a data-driven approach. By analysing learners' performance and perceptions, the study aims to determine whether technology-enabled instruction can effectively bridge the gap between language learning and practical communication skills, particularly among students from rural and vernacular-medium backgrounds.

4. Methodology of the Study

This study adopts a mixed-method approach, combining qualitative and quantitative data to ensure a comprehensive evaluation.

i). Data Analysis and Interpretation

The collected data were systematically analysed using a combination of descriptive statistical techniques and interpretative frameworks to derive meaningful insights into the effectiveness of the Naan Mudhalvan English Communication Programme. The analytical approach was designed to transform both qualitative and quantitative responses into structured, interpretable outcomes that reflect the multidimensional impact of the programme.

To ensure methodological rigor, the questionnaire was structured across four primary dimensions, each addressing a distinct yet interconnected aspect of language learning and development.

ii). Dimensions of Analysis

Data were collected through a questionnaire to analyse the following dimensions: demographic profiling, psychological impact, skill acquisition, and professional readiness.

i). **Demographic Profiling:** The demographic profiling focused on the demographic and linguistic background of the participants. This component was essential in understanding the baseline conditions under which learners engaged with the programme. Attention was given to the medium of instruction, as it plays a crucial role in shaping learners' prior exposure to English. The predominance of Tamil-medium students in the sample highlights the contextual relevance of the study and underscores the necessity of targeted pedagogical interventions.

ii). **Psychological Impact:** The second dimension, which is psychological impact examined the psychological implications of the programme, particularly in relation to confidence levels and language anxiety. Drawing on the concept of Foreign Language Classroom Anxiety, this dimension sought to assess whether the programme contributed to reducing learners' fear of using English in communicative contexts. Psychological readiness is a

critical factor in language acquisition, as learners who experience anxiety are less likely to participate actively in communicative activities.

- iii). **Skill Acquisition:** This dimension addressed the development of the four macro-skills of language—listening, speaking, reading, and writing. This component was central to the study, as it relates to the core objective of the programme: enhancing communicative competence. The analysis focused on students' self-reported improvements, which, while subjective, provide valuable insights into perceived learning outcomes.
- iv). **Professional Readiness:** The final dimension evaluated the extent to which the programme prepared students for professional contexts, particularly the global job market. This includes aspects such as interview preparedness, confidence in formal communication, and the ability to use English in workplace scenarios. Given the employability-oriented nature of the Naan Mudhalvan scheme, this dimension is of particular significance.

iii). Quantification of Responses

The questionnaire primarily consisted of Likert-scale items ranging from "Strongly Agree" to "Strongly Disagree." Facilitate statistical analysis, these responses were converted systematically into numerical values on a scale of 1 to 5. This transformation enabled the application of descriptive statistical measures, allowing for the identification of trends and patterns in the data.

In addition to numerical coding, frequency distribution was employed to determine the prevalence of specific responses. This approach provided a clear picture of the overall sentiment of participants and helped identify the most effective components of the programme.

iv). Data Collection

Student feedback through structured questionnaires distributed through Google Forms. The questionnaire included Likert-scale items to measure students' perceptions of skill improvement.

v). Sample

The sample consists of undergraduate students from diverse socio-economic backgrounds, with a significant representation of rural learners. The dataset consists of seventy responses, collected from first year undergraduate students enrolled in Government Arts and Science Colleges.

A significant majority of respondents belong to Tamil-medium backgrounds, confirming limited prior exposure to English. This demographic feature is crucial in interpreting the results, as it reflects the programme's relevance to linguistically disadvantaged learners.

vi). Analytical Framework and Their Significance:

The data is analysed using these statistical methods:

- Descriptive statistics (mean, standard deviation)
- Composite Communicative Skills Index (CSI)

i). Mean

The mean was employed to assess the general tendencies in students' responses regarding the efficacy of the communication skills training provided under the Naan Mudhalvan Scheme. The mean scores were calculated for each variable. Values exceeding 4.0 reflect a high level of agreement among students, indicating notable improvement in their communication abilities, whereas values 2.0 and below signify

lower levels of agreement. The following formula was used to calculate these mean values.

$$\bar{x} = \frac{\sum x}{N}$$

where \bar{x} = Mean, $\sum x$ = Sum of all responses and N = Number of students

ii). Standard Deviation:

The standard deviation (SD) serves as an indicator of response variability. Lower SD values reflect greater uniformity in students' perceptions, whereas higher values denote increased divergence. The following formula is employed to compute standard deviation.

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}}$$

Where σ = Standard Deviation, x = Individual score, \bar{x} = Mean and N = Number of responses.

iii). Communication Skill Index (CSI):

The Communication Skill Index (CSI) is determined by averaging the mean scores of essential variables, including speaking ability, confidence, and comprehensive communication skills. A CSI score exceeding 4.0 signifies substantial overall improvement and underscores the programme's effectiveness, whereas a score 2.0 and below reflects minimal progress. The following formula is used to calculate the Communication Skill Index (CSI).

$$CSI = \frac{\sum \bar{x}_i}{n}$$

Where \bar{x}_i = Mean of each variable and n = Number of variables

iv). Significance:

These statistical metrics establish a reliable and objective foundation for analysis. The mean highlights overall trends, the standard deviation assesses consistency, and the CSI provides a comprehensive evaluation of the programme's impact. Collectively, these measures determine whether technology-enabled training under the Naan Mudhalvan Scheme significantly enhances students' English communication skills.

5. Analysis and Results

The dataset consists of approximately seventy responses, collected from undergraduate students enrolled in Government Arts and Science College.

A significant majority of respondents belong to Tamil-medium backgrounds, confirming limited prior exposure to English. This demographic feature is crucial in interpreting the results, as it reflects the programme's relevance to linguistically disadvantaged learners.

6. Descriptive Statistical Analysis

After converting the Likert-scale responses into numerical values and calculating averages across all valid responses, the following descriptive statistics were obtained:

Table 1:

Variable	Mean (M)	Standard Deviation (SD)
Speaking Ability	4.31	0.78
Confidence Improvement	4.36	0.69
Fear Reduction	4.18	0.84
Interview Preparation	4.05	1.12
Overall Communication Skills	4.28	0.86

7. Interpretation of Mean Scores

The mean values for all variables exceed 4.0, which indicates a high level of agreement among students regarding the effectiveness of the Naan Mudhalvan English Communication Programme.

i). Speaking Ability (M = 4.31)

The high mean score for speaking ability indicates that the programme effectively addresses one of the most challenging aspects of language acquisition, particularly for rural learners. Students moved from:

- Hesitation → Participation
- Silence → Expression

ii). **Confidence Improvement (M = 4.36):** In language learning confidence acts as a catalyst. Without psychological readiness, even linguistically competent learners may hesitate to communicate. This variable records the highest mean score, demonstrating that the programme has had a strong psychological impact on learners. Students report increased confidence in speaking English, which is a crucial determinant of communicative competence.

iii). **Fear Reduction (M = 4.18):** A reduction in fear of speaking English is a significant outcome, especially for students from rural backgrounds who often experience language anxiety.

iv). **Interview Preparation (M = 4.05):** Although still positive, this is the **lowest mean score**, suggesting that this area requires further pedagogical strengthening.

v). **Overall Communication Skills (M = 4.28):** This confirms that improvement is not limited to a single skill but reflects holistic development across multiple dimensions of communication.

8. Standard Deviation Analysis

The standard deviation values provide insight into the consistency of student experiences.

i). **Lowest Variability:** Confidence levels among students showed consistent improvement, as evidenced by the low standard deviation value (SD = 0.69). This uniformity indicates that all participants experienced similar gains in their confidence, demonstrating the programme's effectiveness in fostering psychological readiness across the group.

ii). **Highest Variability:** The interview preparation component, which recorded a standard deviation of 1.12, highlights the presence of unequal learning outcomes among students. This suggests that while some students may have benefited significantly from the training, others experienced less pronounced improvement, indicating a need for more tailored pedagogical approaches to ensure consistent progress for all participants.

iii). **Interpretation of Variability:** The elevated standard

deviation observed in interview preparation underscores considerable variation in student outcomes. While a segment of students benefited significantly from the training, others were not exposed sufficiently to the necessary preparatory exercises.

This disparity is indicative of differences in individual engagement levels, the extent of practice opportunities provided, and the absence of real-life simulation experiences. Collectively, these factors contributed to uneven progress, highlighting the need for more inclusive and tailored pedagogical strategies to ensure consistent development across all participants.

9. Communication Skill Index (CSI)

$$CSI = \frac{4.31 + 4.36 + 4.18 + 4.05 + 4.28}{5}$$

$$CSI = 4.23$$

9.1. Interpretation of CSI

The Communication Skill Index (CSI = 4.23) reflects a high degree of overall effectiveness in the Naan Mudhalvan programme, demonstrating strong improvements across various communication skills and a positive perception among participants. A CSI score exceeding 4.0 not only signifies substantial progress in communicative competence but also confirms that undergraduate learners benefited markedly from the programme. These results highlight the programme's capacity to foster valuable skill development, supporting its reputation as an impactful initiative for enhancing communication abilities in an academic context.

10. Key Findings

Based on both quantitative and qualitative analysis:

Major Findings

- The programme significantly improves confidence (M = 4.36)
- Strong improvement in speaking ability (M = 4.31)
- Holistic development in communication skills (M = 4.28)
- Reduction in language anxiety (M = 4.18)
- Interview preparation needs improvement (SD = 1.12)
- CSI = 4.23 confirms high effectiveness

The findings clearly demonstrate that the Naan Mudhalvan English Communication Programme is highly effective in enhancing students' communicative competence, particularly in terms of confidence and speaking ability. However, the variability observed in interview preparation highlights the need for more structured, personalized, and context-driven pedagogical interventions.

11. Recommendations for Programme Enhancement

To further improve the effectiveness of the Naan Mudhalvan English Communication Programme and address areas identified for pedagogical refinement, the following recommendations are proposed.

- Incorporation of Real-Life Communication Activities:** It is essential to integrate more real-life communication activities within the programme. This can be achieved by including debates and mock interviews, which provide students with practical opportunities to apply their skills and build confidence in authentic contexts.
- Extension of Training Duration:** Extending the duration of the training programme will support sustained learning

and allow participants more time to internalise concepts and practise communication skills. A longer programme helps reinforce learning outcomes and contributes to holistic development.

- iii). **Provision of Personalised Feedback:** Providing personalised feedback to each participant is recommended to address individual learning needs. Tailored guidance enables students to overcome specific challenges, enhances motivation, and supports their growth in communicative competence.

12. Conclusion

The Naan Mudhalvan English Communication Programme represents a significant advancement in technology-enabled language learning. The findings demonstrate its effectiveness in enhancing communicative competence, particularly in terms of confidence and speaking ability.

Though, the study also highlights the limitations of technology when used in isolation. The variability observed in interview preparation underscores the need for pedagogical refinement and contextual adaptation.

In conclusion, the future of language education lies not in replacing traditional methods but in integrating them with technological innovation. A balanced, human-centred approach remains essential for achieving meaningful and sustainable learning outcomes.

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