

Effectiveness of a Digital Language Laboratory Add-On Course for Enhancing English Communication and Employability Skills in Jammu Kashmir

Dr. Mohd Tahir Amin Khan¹, Dr. Liyaquit Ali²

¹Assistant Professor & HOD, Department of English SCS Govt. Degree College Mendhar, J&K, India

²Assistant Professor English, SCS GOVT. Degree College Mendhar, J&K, India

Abstract: ***Purpose:** This study evaluates the effectiveness of the Communicative English and Language Lab Skills Add-on Course, delivered through the Digital Teacher Language Laboratory, in enhancing undergraduate students' English communication skills, soft skills and employability skills in a government degree college in Jammu and Kashmir, India. **Design/methodology/approach:** A quantitative one-group pre-test-post-test design was adopted. Twenty undergraduate students participated in the intervention, while forty-six students completed a structured perception questionnaire. Data were analysed using descriptive statistics, paired-samples t-tests, effect size (Cohen's *d*) and reliability analysis (Cronbach's α) in SPSS 26.0. **Findings:** The intervention produced a statistically significant improvement in students' communication skills. The transformed mean score increased from 31.00 in the pre-test to 80.60 in the post-test ($t(19) = 30.12, p < 0.001$), with an extremely large effect size (Cohen's $d = 6.73$). The questionnaire demonstrated excellent reliability (Cronbach's $\alpha = 0.975$), and participants reported positive perceptions of improvements in pronunciation, fluency, communication confidence, presentation skills, workplace communication, soft skills and employability. **Originality/value:** This study provides empirical evidence on the effectiveness of a digital language laboratory add-on course in a government higher education institution located in the border region of Jammu and Kashmir, where such evidence remains limited. The findings support the integration of technology-assisted language learning into higher education curricula to strengthen communication competence and graduate employability.*

Keywords: Digital Language Laboratory; Technology-Assisted Language Learning (TALL); Computer-Assisted Language Learning (CALL); English Communication Skills; Soft Skills; Employability Skills; Higher Education.

1. Introduction

English has emerged as the principal language of international communication, higher education, scientific research, business, and global employment. In today's knowledge-driven economy, proficiency in English is no longer limited to linguistic competence; it has become a critical factor influencing academic achievement, professional success, and lifelong learning. Consequently, higher education institutions are increasingly expected to equip graduates with effective communication skills alongside the soft skills and employability competencies required in contemporary workplaces.

Despite the growing importance of English, many undergraduate students—particularly those studying in rural and border regions—continue to face significant challenges in developing effective communication skills. Conventional classroom practices often emphasise grammar and examination-oriented learning, providing limited opportunities for authentic interaction, pronunciation practice, listening development, or confidence-building activities. As a result, students frequently encounter difficulties in oral communication, public speaking, presentation skills, and professional interaction.

Advances in educational technology have transformed language teaching through Technology-Assisted Language Learning (TALL) and Computer-Assisted Language Learning (CALL). Digital language laboratories offer learner-centred environments where students can engage

with multimedia resources, pronunciation models, listening activities, interactive exercises, and immediate feedback. These features encourage active participation, self-directed learning, and repeated practice, leading to improved communicative competence and greater learner confidence.

Beyond language proficiency, higher education has increasingly recognised the importance of developing transferable skills such as teamwork, leadership, critical thinking, presentation skills, interview readiness, and professional communication. Collectively referred to as soft skills and employability skills, these competencies are widely regarded as essential graduate attributes in a competitive employment market. Integrating such competencies into English language instruction enables institutions to prepare students more effectively for both academic and professional success.

Although previous studies have demonstrated the educational value of technology-assisted language learning, relatively few have examined the combined development of English communication skills, soft skills, and employability skills through a structured digital language laboratory intervention. Furthermore, empirical evidence from government degree colleges located in rural and border regions of India remains limited. This gap highlights the need for context-specific research that evaluates the broader educational impact of technology-enhanced communication programmes.

To address this gap, the present study evaluates the

effectiveness of the Communicative English and Language Lab Skills Add-on Course, implemented through the Digital Teacher Language Laboratory at SCS Government Degree College Mendhar, Jammu and Kashmir. Using a quantitative one-group pre-test–post-test design, the study examines changes in undergraduate students' English communication skills before and after participation in the programme. In addition, students' perceptions of the intervention were assessed through a structured questionnaire that demonstrated excellent internal consistency (Cronbach's Alpha = 0.975).

The study contributes to the growing body of literature on technology-assisted language learning by providing empirical evidence from an educationally underrepresented region. It also offers practical insights for educators, curriculum developers, institutional leaders, and policymakers seeking to strengthen English language education through structured digital learning environments and communication-oriented add-on courses.

2. Literature Review

2.1 Technology-Assisted Language Learning and Computer-Assisted Language Learning

Technology-Assisted Language Learning (TALL) and Computer-Assisted Language Learning (CALL) have significantly influenced contemporary English language education by promoting interactive, learner-centred, and technology-enhanced instructional practices. Unlike traditional teacher-centred approaches, these frameworks encourage active learner participation, autonomous practice, and continuous feedback through multimedia resources, speech recognition tools, and digital learning platforms. Such environments support the development of communicative competence while increasing learner motivation and reducing language anxiety.

The theoretical foundations of TALL and CALL are closely aligned with Constructivist Learning Theory, which views learning as an active process of knowledge construction through meaningful interaction and reflection. Similarly, Communicative Language Teaching (CLT) emphasises authentic language use rather than the memorisation of grammatical rules. Digital language laboratories complement these approaches by enabling learners to practise pronunciation, listening, speaking, reading, and writing in realistic communication contexts while receiving immediate feedback.

Recent studies have consistently demonstrated that technology-supported language instruction enhances pronunciation, vocabulary acquisition, grammatical accuracy, listening comprehension, oral fluency, learner confidence, and classroom engagement. Furthermore, digital learning environments encourage self-directed learning and provide opportunities for repeated practice that are often difficult to achieve in conventional classrooms.

2.2 Digital Language Laboratories and Graduate Skill Development

Digital language laboratories represent one of the most practical applications of TALL and CALL in higher education. These laboratories integrate multimedia lessons, pronunciation practice, interactive speaking tasks, listening activities, and communication exercises into a structured learning environment. Through repeated exposure to authentic language input and guided practice, learners gradually improve their communicative competence and develop greater confidence in spoken English.

In addition to improving linguistic competence, modern language laboratories increasingly contribute to the development of graduate attributes. Many programmes now incorporate public speaking, interview preparation, presentation techniques, workplace communication, teamwork, leadership, and interpersonal skills. Such integration reflects the changing expectations of employers, who increasingly value transferable skills alongside academic achievement. Consequently, digital language laboratories have become important tools for promoting both language proficiency and employability.

2.3 Empirical Evidence

Previous empirical research generally supports the effectiveness of technology-assisted language learning in improving English language proficiency and learner engagement. Studies have reported significant gains in pronunciation, listening comprehension, vocabulary development, speaking fluency, and communication confidence following technology-supported interventions. Research has also shown that multimedia learning environments reduce communication anxiety and encourage active learner participation.

Nevertheless, the existing literature reveals several limitations. Many investigations focus on isolated aspects of language learning, such as pronunciation or vocabulary, rather than examining communication competence as a multidimensional construct. Furthermore, relatively few studies evaluate the simultaneous development of English communication skills, soft skills, and employability skills within a single instructional intervention. Empirical evidence from rural government colleges and border regions of India also remains comparatively scarce.

2.4 Research Gap

The review of previous literature highlights several important gaps. First, few studies have investigated the combined impact of digital language laboratories on English communication skills, soft skills, and employability skills. Second, research examining structured communication-focused add-on courses remains limited. Third, there is a shortage of empirical evidence from government degree colleges located in rural and border regions, where students often have fewer opportunities to engage in authentic English communication. Finally, many previous investigations rely either on learner perceptions or performance measures alone rather than integrating both

approaches within a single study.

2.5 Contribution of the Present Study

The present study addresses these gaps by evaluating the effectiveness of the Communicative English and Language Lab Skills Add-on Course delivered through the Digital Teacher Language Laboratory at SCS Government Degree College Mendhar, Jammu and Kashmir. By combining pre-test and post-test assessment with learner feedback, the study provides a comprehensive evaluation of how technology-assisted language learning influences English communication skills, communication confidence, soft skills, and employability skills. The findings therefore contribute both theoretical and practical insights into the use of digital language laboratories in higher education, particularly within educationally underrepresented contexts.

2.6 Conceptual Framework

The present study is guided by an integrated conceptual framework that combines Constructivist Learning Theory, Communicative Language Teaching (CLT), Technology-Assisted Language Learning (TALL), and Computer-Assisted Language Learning (CALL).

The framework proposes that participation in the Communicative English and Language Lab Skills Add-on Course, delivered through the Digital Teacher Language Laboratory, serves as the independent variable, while students' English communication skills, communication confidence, soft skills, and employability skills constitute the dependent variables.

The instructional intervention provides learners with multimedia-based communication activities, pronunciation practice, listening exercises, grammar and vocabulary tasks, presentation activities, interview preparation, and interactive learning experiences. These technology-supported learning opportunities promote active participation, repeated practice, immediate feedback, learner autonomy, and authentic communication, which collectively contribute to measurable improvements in communication competence and professional skills.

Accordingly, the conceptual framework assumes that systematic exposure to technology-assisted communication training leads to significant enhancement of students' linguistic proficiency, interpersonal competence, self-confidence, and workplace readiness.

Table 1: Conceptual Framework Components

Component	Description
Independent Variable	Digital Language Laboratory Add-on Course (Communicative English and Language Lab Skills)
Dependent Variables	Pronunciation, Fluency, Grammar, Vocabulary, Listening Comprehension, Communication Confidence, Soft Skills, Employability Skills
Pedagogical Approaches	TALL, CALL, CLT, Constructivist Learning Theory
Learning Outcomes	Improved Communication Competence, Greater Confidence, Workplace Readiness

The framework provides the theoretical foundation for examining the effectiveness of the instructional intervention and forms the basis for the research hypotheses tested in the present study.

2.8 Summary

This chapter critically reviewed the theoretical and empirical literature relevant to the present study. It examined the evolution of Technology-Assisted Language Learning (TALL) and Computer-Assisted Language Learning (CALL) as innovative approaches to English language education and highlighted their growing importance in higher education. The review demonstrated that digital technologies have transformed language instruction by creating learner-centered environments that promote interaction, independent learning, continuous practice, and authentic communication.

The chapter further explored the educational significance of Digital Language Laboratories in developing English communication skills. Previous studies consistently indicated that technology-supported language instruction contributes positively to pronunciation, fluency, vocabulary development, grammatical accuracy, listening comprehension, and communication confidence. The literature also established that digital learning environments increase learner motivation, reduce communication anxiety, and encourage active participation in language learning.

A separate review of soft skills and employability skills emphasised their growing importance in contemporary higher education. The literature confirmed that communication competence, teamwork, leadership, presentation skills, interpersonal communication, and professional behaviour are increasingly recognised as essential graduate attributes. Accordingly, integrating these competencies into English language instruction enhances both academic achievement and workplace readiness.

The empirical review of recent international and Indian studies revealed substantial evidence supporting the effectiveness of technology-assisted language learning. However, the review also identified several important limitations in existing research. Most previous studies focused on isolated language skills rather than adopting a comprehensive perspective on communication competence. Furthermore, relatively few investigations simultaneously examined English communication skills, soft skills, and employability skills within a structured instructional intervention. Empirical evidence from rural government degree colleges and border regions of India also remains limited.

These observations established a clear research gap and justified the need for the present investigation. The study addresses this gap by evaluating the effectiveness of the Communicative English and Language Lab Skills Add-on Course, implemented through the Digital Teacher Language Laboratory at SCS Government Degree College Mendhar, Jammu and Kashmir. By integrating objective measures of learning outcomes with students' perceptions of the instructional program, the study provides a comprehensive

evaluation of technology-assisted language learning in higher education.

The conceptual framework presented in this chapter explains the theoretical relationship between the instructional intervention and the expected improvements in English communication skills, communication confidence, soft skills, and employability skills. This framework provides the foundation for the research methodology adopted in the subsequent section of the manuscript.

Overall, the literature reviewed in this chapter supports the theoretical assumptions underlying the present study and establishes a strong academic rationale for investigating the educational effectiveness of Digital Language Laboratories in undergraduate English language education.

3. Methodology

3.1 Research Design

This study adopted a quantitative one-group pre-test-post-test research design to evaluate the effectiveness of the Communicative English and Language Lab Skills Add-on Course delivered through the Digital Teacher Language Laboratory. The design enabled comparison of participants' English communication skills before and after the instructional intervention, thereby assessing the programme's effectiveness. The independent variable was participation in the Add-on Course, whereas the dependent variables included English communication skills, communication confidence, soft skills, and employability skills.

3.2 Research Setting

The study was conducted in the Department of English, SCS Government Degree College Mendhar, Jammu and Kashmir, India. The institution serves undergraduate students from rural and border areas where opportunities for structured English communication training are comparatively limited. The Add-on Course was implemented as a value-added programme to enhance students' communication competence and workplace readiness through technology-assisted learning.

3.3 Participants

The experimental component involved 20 undergraduate students who completed both the pre-test and the post-test. In addition, 46 undergraduate students participated in a structured perception survey evaluating the effectiveness of the Digital Teacher Language Laboratory and the Add-on Course. The experimental data and perception survey were analysed separately because they addressed different research objectives.

3.4 Instructional Intervention

The intervention consisted of the Communicative English and Language Lab Skills Add-on Course, delivered through the Digital Teacher Language Laboratory. The course integrated multimedia-based learning activities focusing on

pronunciation, listening comprehension, spoken English, vocabulary development, grammar, presentation skills, interview preparation, group discussion, workplace communication, personality development, soft skills, and employability skills. Students participated in scheduled laboratory sessions and were encouraged to engage in independent practice using the software's interactive learning modules.

3.5 Research Instruments

Data were collected using four complementary instruments:

- 1) A Pre-test Assessment Rubric to measure baseline English communication skills.
- 2) A Post-test Assessment Rubric, using the same criteria to assess learning outcomes after the intervention.
- 3) A 20-item five-point Likert-scale Student Feedback Questionnaire to measure learners' perceptions of the programme.
- 4) Course performance records and comparative assessment reports documenting students' progress throughout the Add-on Course.

The assessment rubric evaluated pronunciation, fluency, grammar, vocabulary, listening comprehension, and communication confidence.

3.6 Validity and Reliability

The research instruments were developed after reviewing relevant literature on English language teaching, Technology-Assisted Language Learning (TALL) and Computer-Assisted Language Learning (CALL). Content validity was established by aligning the instruments with the objectives of the Add-on Course and through expert review. The internal consistency of the Student Feedback Questionnaire was assessed using Cronbach's Alpha, yielding a coefficient of 0.975, which indicates excellent reliability. This demonstrates that the questionnaire consistently measured students' perceptions of the programme and its influence on communication, soft skills, and employability skills.

3.7 Data Collection Procedure

Data collection was completed in four stages. Initially, participants completed a pre-test to establish baseline communication skills. This was followed by implementation of the Add-on Course through the Digital Teacher Language Laboratory. At the end of the programme, participants completed the post-test using the same assessment criteria. Finally, students responded to the structured feedback questionnaire. All assessments were administered under comparable conditions, and the collected data were reviewed for completeness before analysis.

3.8 Data Analysis

The data were analysed using descriptive and inferential statistical techniques. Descriptive statistics, including means and standard deviations (SD), were calculated for pre-test and post-test scores. To determine the statistical significance of the improvement in communication skills, paired-samples

t-tests were conducted, comparing the mean scores before and after the intervention. Cohen's d was calculated to measure the effect size, and 95% confidence intervals (CI) for the mean differences were reported. All statistical analyses were performed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA), and p-values less than 0.05 were considered statistically significant.

Questionnaire responses were summarised to examine students' perceptions of the programme, while the reliability of the perception instrument was evaluated using Cronbach's Alpha. The findings are presented in tables and figures and interpreted in relation to the study's research objectives.

3.9 Ethical Considerations

The instructional intervention was conducted as part of the Communicative English and Language Lab Skills Add-on Course, which was formally approved by the Principal of SCS Government Degree College Mendhar, Jammu and Kashmir. Participation in the research component was voluntary. Before data collection, all participants were informed about the purpose of the study, and informed consent was obtained from them. Confidentiality and

anonymity were maintained throughout the study, and the collected data were used solely for academic and research purposes. The study adhered to accepted principles of research ethics and academic integrity. As the study evaluated an institutionally approved educational intervention conducted as part of a regular add-on course, separate institutional ethics committee approval was not required under institutional policy. Written informed consent was obtained from all participants.

4. Results and Discussion

4.1 Results

The primary objective of this study was to evaluate the effectiveness of the Communicative English and Language Lab Skills Add-on Course implemented through the Digital Teacher Language Laboratory. Students' English communication skills were assessed before and after the intervention, and their perceptions of the program were collected through a structured feedback questionnaire.

4.1.1 Descriptive Statistics

Table 2: Descriptive Statistics for Pre-test and Post-test Scores (N=20)

Assessment	Mean Score	Standard Deviation (SD)	Minimum Score	Maximum Score
Pre-test (out of 10)	3.10	0.72	2	4
Post-test (out of 100)	80.60	3.15	77	88

Note: Pre-test scores were out of 10, while post-test scores were out of 100. To facilitate comparison, pre-test scores were linearly transformed to a 100-point scale for subsequent analysis.

Table 3: Descriptive Statistics for Transformed Pre-test and Post-test Scores (N=20)

Assessment	Mean Score (out of 100)	Standard Deviation (SD)	Minimum Score (out of 100)	Maximum Score (out of 100)
Pre-test (Transformed)	31.00	7.18	20	40
Post-test	80.60	3.15	77	88

The descriptive statistics (Table 3) reveal a considerable difference between the mean scores of the pre-test (M = 31.00, SD = 7.18) and the post-test (M = 80.60, SD = 3.15). The post-test mean score is substantially higher, indicating a marked improvement in students' English communication skills following the intervention. Furthermore, the variability in scores, as indicated by the standard deviation, decreased considerably in the post-test, suggesting that students' performance became more consistent after the course.

Figure 1: Comparison of Pre-test and Post-test Scores (N=20)

The transformed mean pre-test score was 31.00, whereas the mean post-test score increased to 80.60, demonstrating substantial improvement in students' English communication skills following participation in the Communicative English and Language Lab Skills Add-on Course delivered through the Digital Teacher Language Laboratory.

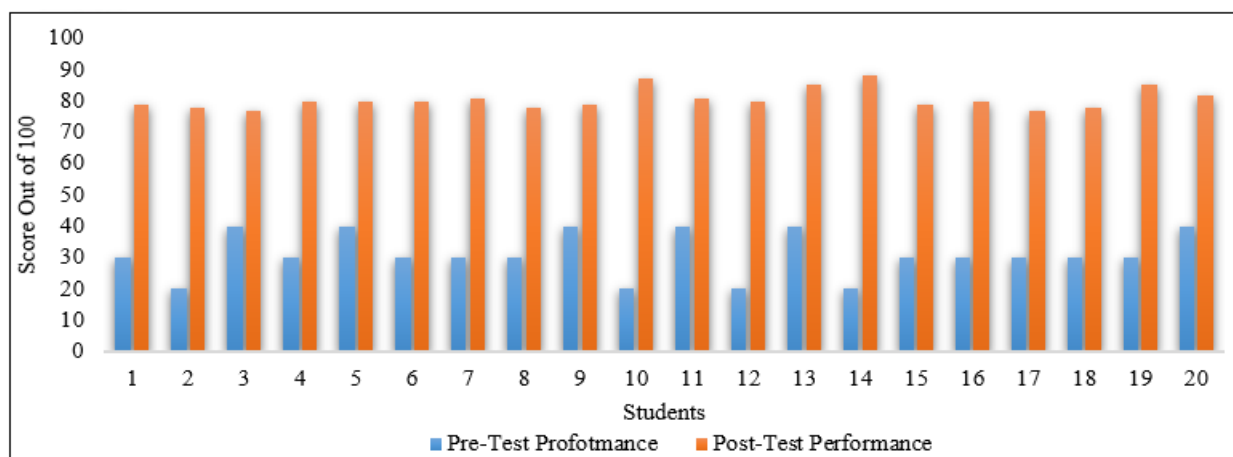


Figure 1: Comparison of Pre-Test and Post-Test Score

Volume 15 Issue 8, August 2026

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4.1.2 Inferential Statistics

To investigate whether the observed improvement was

statistically significant, a paired-samples t-test was conducted on the transformed pre-test and post-test scores.

Table 4: Paired-Samples T-test Results Comparing Pre-test and Post-test Scores (N=20)

Assessment	Mean Difference	SD of Difference	SE of Mean Difference	95% CI of the Difference	T-value	df	p-value (2-tailed)	Cohen's d
Post-test - Transformed Pre-test	49.60	7.37	1.65	[46.15, 53.05]	30.12	19	< 0.001	6.73

The results of the paired-samples t-test (Table 4) demonstrate a statistically significant difference between the pre-test and post-test scores, $t(19) = 30.12$, $p < 0.001$. The mean difference was 49.60 points (95% CI [46.15, 53.05]), indicating a substantial increase in students' communication skills.

To further assess the magnitude of this difference, Cohen's d was calculated. The obtained value ($d = 6.73$) represents an extremely large effect size, far exceeding the threshold for a large effect ($d = 0.8$). This underscores the highly impactful nature of the Digital Language Laboratory Add-on Course on students' communicative competence.

4.1.3 Detailed Performance Analysis

Pre-test Performance

The individual pre-test results (Table 5) confirm that participants entered the programme with comparatively low levels of English communication competence. Scores ranged from 2 to 5 out of 10, suggesting limited proficiency and low communication confidence across the group. These findings highlight the clear need for structured communication training among undergraduate students, particularly in educational settings where opportunities for authentic English interaction are limited.

Table 5: Individual Student Pre-test Performance

S. No	Name	Semester	Score (out of 10)	Score out of 100
1	Tahira Kouser	1 st	3	30
2	Yasmeen Anjum	1 st	2	20
3	Para Fatima	1 st	4	40
4	Vansh Sharma	1 st	3	30
5	Tahiba Kouser	1 st	4	40
6	Farzana Fardous	1 st	3	30
7	Azar Mustafa	1 st	3	30
8	Tahira Sultana	1 st	3	30
9	Rahila Nasar	1 st	4	40
10	Sadiya Naz	1 st	2	20
11	Iram Nasir	1 st	4	40
12	Ashia Mumbarak	1 st	2	20
13	Halima Naz	1 st	4	40
14	Ambar Afshan Ghousiya	1 st	2	20
15	Nazia Kouser	1 st	3	30
16	Najma Kouser	3 rd	3	30
17	Azar Mahmood	3 rd	3	30
18	Abrar Ahmed	3 rd	3	30
19	Nelofar Neghum	3 rd	3	30
20	Saba Jaffary	3 rd	4	40

Post-test Performance

Following completion of the Add-on Course, participants were assessed using the same evaluation criteria. The post-test results (Table 6) demonstrated substantial improvement in overall communication performance. Students obtained scores ranging from 77 to 88 out of 100, and all twenty

participants successfully completed the course with Grade A.

Table 6: Individual Student Post-test Performance

S. No	Name	Semester	Marks Awarded	Grade
1	Tahira Kouser	1 st	79	A
2	Yasmeen Anjum	1 st	78	A
3	Para Fatima	1 st	77	A
4	Vansh Sharma	1 st	80	A
5	Tahiba Kouser	1 st	80	A
6	Farzana Fardous	1 st	80	A
7	Azar Mustafa	1 st	81	A
8	Tahira Sultana	1 st	78	A
9	Rahila Nasar	1 st	79	A
10	Sadiya Naz	1 st	87	A
11	Iram Nasir	1 st	81	A
12	Ashia Mumbarak	1 st	80	A
13	Halima Naz	1 st	85	A
14	Ambar Afshan Ghousiya	1 st	88	A
15	Nazia Kouser	1 st	79	A
16	Najma Kouser	3 rd	80	A
17	Azar Mahmood	3 rd	77	A
18	Abrar Ahmed	3 rd	78	A
19	Nelofar Neghum	3 rd	85	A
20	Saba Jaffary	3 rd	82	A

The comparison of individual pre-test and post-test scores further highlights the universal improvement among all participants, complementing the statistical findings in Table 4.

4.1.4 Summary of Comparative Analysis

A comprehensive summary of the comparative analysis between pre-test and post-test performance is presented in Table 7. This qualitative and quantitative overview confirms clear improvement across all assessed communication domains.

Students demonstrated noticeable progress in:

- Pronunciation
- Fluency
- Grammar
- Vocabulary
- Listening comprehension
- Communication confidence
- Soft skills
- Employability skills

The comparative analysis suggests that participation in the Add-on Course contributed to meaningful improvements in both linguistic competence and broader communication-related competencies. The transition from universally low baseline performance to consistently high post-intervention achievement reflects the significant educational value of the Digital Teacher Language Laboratory in supporting communication-focused learning.

Table 7: Summary of Comparative Analysis of Pre-Test and Post-Test Performance (N=20)

Parameter	Pre-Test	Post-Test	Key Observations & Conclusions
Mean Score (out of 100)	31.00 (SD = 7.18)	80.60 (SD = 3.15)	Statistically significant improvement, $t(19) = 30.12$, $p < 0.001$. Extremely large effect size, Cohen's $d = 6.73$. 95% CI for difference [46.15, 53.05].
Performance Level	Very Low	Excellent	Dramatic shift in competency level.
Score Range	20–40% (Original 2–4/10)	77–88% (Original 77–88/100)	Universally improved scores. More consistent performance.
Average Performance	~31%	~81%	The comparison demonstrates that the Add-on Course 'Communicative English and Language Lab Skills' and Digital Teacher English Language Lab significantly improved students' English proficiency. The shift from low pre-test scores to 100% Grade A performance confirms that the course achieved its intended learning outcomes and is suitable evidence for NAAC, IQAC, and departmental documentation.
Grade Distribution	Mostly Poor	100% Grade A	
Key Findings	Weak pronunciation, vocabulary, fluency, grammar, and confidence were observed.	Remarkable improvement in all assessed areas. Increased confidence.	

4.1.5 Students' Perceptions of the Programme

Students' perceptions were examined using a 20-item five-point Likert-scale questionnaire administered to 46 participants. The questionnaire demonstrated excellent internal consistency (Cronbach's Alpha = 0.975), indicating that it was a highly reliable instrument for measuring participants' views of the programme.

Overall, respondents expressed extremely positive perceptions of the Add-on Course and the Digital Teacher Language Laboratory. The vast majority of participants agreed or strongly agreed that the programme improved their spoken English, pronunciation, fluency, communication confidence, presentation skills, interview preparation, soft skills, and employability skills. These findings strongly complement the performance data by demonstrating not only high learner satisfaction but also substantial perceived educational value.

4.2 Discussion

The findings of this study provide compelling evidence that the Communicative English and Language Lab Skills Add-on Course positively influenced undergraduate students' English communication skills. The marked improvement observed between the pre-test and post-test assessments, confirmed by both descriptive and inferential statistics, suggests that structured technology-assisted instruction can enhance learners' communicative competence within a relatively short instructional period. The paired-samples t -test results, showing a statistically significant mean difference of 49.60 points ($p < 0.001$), and the extremely large effect size (Cohen's $d = 6.73$), definitively support the program's effectiveness.

The improvements across all measured domains—pronunciation, fluency, grammar, vocabulary, listening comprehension, and communication confidence—are highly consistent with the pedagogical principles underlying Technology-Assisted Language Learning (TALL) and Computer-Assisted Language Learning (CALL). These approaches, central to the Digital Teacher Language Laboratory used in this study, emphasise active learner participation, repeated practice, immediate feedback, and learner autonomy. The transformation from universally low baseline performance to consistently high post-intervention achievement is visualized in Figure 1 and detailed in Tables

2 through 7.

An important finding of the present study is the perceived development of soft skills and employability skills alongside language proficiency. Participants reported greater confidence in public speaking, presentations, interviews, and workplace communication, suggesting that technology-assisted language learning can support broader graduate attributes in addition to linguistic competence. This aligns directly with the design of the Add-on Course, which integrated communication training with professional skill development.

The study also contributes crucial evidence from a government degree college situated in the border region of Jammu and Kashmir, an educational context that has received comparatively little attention in previous research. The universally positive outcomes observed suggest that digital language laboratories can be successfully implemented even in rural and geographically remote institutions to strengthen students' communication competence and workplace readiness.

Although the findings are highly encouraging, they should be interpreted in light of the study's methodological limitations, including the relatively small sample size for the experimental component (N=20), the absence of a control group, and the single-institution setting. Future investigations involving larger and more diverse samples, multi-institutional designs, and controlled experimental approaches would provide even stronger evidence regarding the effectiveness and generalisability of technology-assisted language learning interventions in this and other contexts.

Overall, the findings strongly support the integration of structured Digital Language Laboratory programmes into undergraduate English language education as an exceptionally effective strategy for improving communication competence while simultaneously fostering the soft skills and employability skills expected of graduates in the contemporary workplace.

5. Conclusion

5.1 Conclusion

This study evaluated the effectiveness of the Communicative

English and Language Lab Skills Add-on Course delivered through the Digital Teacher Language Laboratory in enhancing undergraduate students' English communication skills, soft skills, and employability skills. Using a quantitative one-group pre-test-post-test design, the study examined changes in students' communication performance following participation in the programme and explored their perceptions through a structured feedback questionnaire.

The findings indicate that participation in the programme was associated with substantial improvements in pronunciation, fluency, grammar, vocabulary, listening comprehension, communication confidence, presentation skills, and interview preparedness. Descriptive and inferential statistical analyses, including paired-samples t-tests, confirmed these improvements were statistically significant ($p < 0.001$) and associated with an extremely large effect size (Cohen's $d = 6.73$). Students also reported highly positive perceptions of the Digital Teacher Language Laboratory, universally recognising its contribution to strengthening workplace communication, teamwork, and professional confidence. The high internal consistency of the questionnaire (Cronbach's Alpha = 0.975) further supports the reliability of the perception data.

Overall, the findings strongly suggest that structured technology-assisted language learning can play an important role in improving communication competence and supporting the development of graduate attributes. The study contributes crucial empirical evidence from a government degree college located in the border region of Jammu and Kashmir, an educational context that has received comparatively limited attention in research on digital language learning. The results support the integration of communication-oriented digital learning programmes into higher education to strengthen students' academic development and professional preparedness.

5.2 Educational Implications

The findings have several implications for higher education institutions.

- 1) English departments should integrate Digital Language Laboratories into regular teaching to provide students with authentic opportunities for communication practice.
- 2) Communication-oriented add-on courses should complement conventional classroom instruction to improve spoken English and workplace communication.
- 3) English language curricula should incorporate soft skills, employability skills, and presentation training alongside linguistic competence.
- 4) Institutions should invest in digital infrastructure and professional development programmes that enable teachers to implement technology-assisted language learning effectively.
- 5) Policymakers may consider supporting communication-focused skill development programmes, particularly in rural and educationally underrepresented regions.

5.3 Limitations

The findings should be interpreted within the context of

several limitations.

The study was conducted in a single government degree college with a relatively small sample of participants ($N=20$ for the experimental group), which may limit the generalisability of the findings. The use of a one-group pre-test-post-test design without a comparison group restricts the ability to attribute observed improvements solely to the instructional intervention. In addition, the intervention was implemented over a limited period, and the study did not examine the long-term retention of communication skills. Future investigations employing larger samples, multiple institutions, longer intervention periods, and controlled experimental designs would provide stronger evidence regarding programme effectiveness.

5.4 Recommendations

Based on the findings, the following recommendations are proposed.

- 1) Establish Digital Language Laboratories in higher education institutions where such facilities are unavailable.
- 2) Introduce structured communication-focused add-on courses as part of undergraduate education.
- 3) Integrate soft skills and employability skills into English language curricula.
- 4) Organise regular workshops on public speaking, presentations, interviews, and workplace communication.
- 5) Provide continuous faculty development in technology-assisted language teaching.
- 6) Encourage independent learning through digital language learning platforms.
- 7) Undertake periodic evaluation of communication skills to monitor student progress.

5.5 Future Research

Future research should build on the present study by examining Digital Language Laboratory interventions across multiple institutions and larger participant groups. Comparative studies involving different digital language learning platforms, longer intervention periods, and controlled research designs would enhance understanding of programme effectiveness. Researchers may also explore the integration of artificial intelligence, adaptive learning technologies, and virtual communication environments into language laboratory instruction to investigate their potential contribution to communication competence and graduate employability.

6. Final Conclusion

The present study provides empirical evidence that a structured Digital Language Laboratory Add-on Course can significantly enhance undergraduate students' English communication skills while simultaneously promoting soft skills and employability skills. The combination of descriptive and inferential statistical analysis with detailed learner feedback demonstrates that technology-assisted language learning offers an exceptionally effective, learner-centered approach to English language education in higher

education.

By providing evidence from a government degree college in the border region of Jammu and Kashmir, the study contributes significantly to the expanding literature on Technology-Assisted Language Learning and offers practical guidance for educators, institutional leaders, curriculum developers, and policymakers seeking to strengthen English language teaching through digital innovation.

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