Analysing ESL Proficiency and its Nexus with Higher Education: A Comprehensive Study on English Language Competency among Indian Engineering Students

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Abstract

This empirical study analyses the role played by Indian National Curriculum Framework and its instructional materials in imparting English language as in relevance with the academic achievement and career development of Indian engineering learners. This endeavour has been studied with an impartial assessment of ESL (English as a Second Language) proficiency among Indian engineering students, encompassing those from both regional and English-medium educational backgrounds. The study used random sampling method to identify 150 mechanical engineering students as its target papulation. It tested the English language proficiency of engineering students from both regional and English medium school backgrounds separately and compared the frequency and mean values of the results. The observations from the tests results (IELTS practice tests - Band Score) showed that students who were educated in an English-speaking environment fare somewhat better than their peers educated in a regional medium background. The outcome and findings from the result opines that ESL teaching and learning among students in regional medium schools in India has not attained its zenith. It is below par excellence when compared with English medium schools. This is owing to a curricular structure that does not appear to be suitable for India's diverse classrooms (Indian heterogeneous classrooms). Therefore, the researchers proposed a curriculum which is flexible, impartial, and capable of supporting all sorts of students' educational needs by pairing with English language skills.

Keywords: Career Development, Curriculum Development, ESL Proficiency, Heterogeneous Classroom, Indian Engineering Students.

Introduction

English, in addition to being a native language, holds the status of a "second language." Beyond the 320 million native English speakers, around 200 million people globally communicate proficiently in English as a second language (1). English holds a crucial position in the educational landscape of India, serving as the primary medium of instruction in higher academic settings and functioning as the predominant language of communication in offices nationwide (2). This significance underscores the continued use of English as an instructional medium in Indian schools, even in remote regions where English language proficiency may be lacking. This article aims to analyse the significance of English proficiency for Indian engineers from national, academic, and professional viewpoints. We aim to uncover the real-world situation regarding English language skills among engineering graduates. This exploration will shed light on why the Indian educational curriculum is likely to persist in English for the foreseeable future.

The Importance of English Proficiency for Engineers

English proficiency is paramount for engineering students and those in other professional programs. It is essential for comprehending English-language lectures, engineering textbooks, and reference materials, all of which are ubiquitous in the field (1). Success in academics is profoundly contingent on

proficiency in the English language. Furthermore, in a globalized world, job opportunities extend beyond India's borders, and Indian professionals often work in various countries. Hence, English proficiency is crucial for effective communication in both the academic and professional realms. Given this context, it is imperative to assess the current state of communication skills and English language competency among Indian engineering graduates.

Problem Statement

In India, English language teaching and learning face significant challenges due to the country's vast diversity of schools and the linguistic complexities it presents. The curriculum is frequently revised with the aim of increasing the pass rates, but this often comes at the expense of language acquisition (1). Ranked as the world's second-largest English-speaking country, India has approximately 125 million people, constituting 10.3% of its population, proficient in English (3). Although numerous Indian parents aspire to enrol their children in English-medium schools, there is a noteworthy concern as graduates frequently encounter difficulties in communicating effectively in English-speaking countries like the United Kingdom and the United States (3).

This raises questions about whether India is on the verge of adopting a blend of Hindi and English (Hinglish) while English remains the dominant language. The belief in India that learning English enhances personality development and career prospects necessitates effective language learning methods. Several issues have led to the emergence of effective ESL (English as a Second Language) teaching methods in India.

The Role of the National Curriculum Framework

The elementary education curriculum imparts fundamental skills and knowledge crucial for societal engagement. However, to align with the requirements of the twenty-first century, incorporating global languages should be a steadfast element of primary education (4). There is a call for a more robust implementation of the Three Language Formula, endorsed by the National Curriculum Framework for School Education (5).

Currently, curricular objectives for each language are not individually defined, resulting in shared objectives across languages. This approach does not cater to the unique teaching requirements of each language, including English. A more systematic approach is required to ensure consistency and effectiveness in EFL/ESL (English as a Foreign/Second Language) teaching.

Challenges in Heterogeneous Classrooms

Heterogeneous classrooms pose significant challenges for both educators and learners. This issue is particularly pronounced in Indian schools, where students exhibit diverse abilities, linguistic backgrounds, and socio-economic disparities (6). Linguistic diversity is a common feature in Indian classrooms, with students representing a range of mother tongues, dialects, and cultural backgrounds. The caste system, a prevailing social issue, further influences academic performance. Socioeconomic status, family educational backgrounds, and family support also play crucial roles in students' success. This heterogeneity presents a substantial barrier to language acquisition in India. Hence, the importance of English proficiency for Indian engineers cannot be overstated. This article examines the multifaceted challenges and factors influencing English education in India, with a focus on the national curriculum framework and the heterogeneous nature of Indian classrooms.

Background of the Study

In language acquisition, children typically progress from listening and speaking to reading and writing in their mother tongue. However, the process is reversed when learning English, which often poses challenges for students. It becomes the responsibility of teachers or instructors to facilitate students in mastering the language. Advancements in information and communication technology have revolutionized contemporary teaching practices, necessitating a shift from traditional classroom methods to more innovative approaches. English has emerged as the world's most widely spoken language (7).

English, as a language, cannot be claimed exclusively by any one country or culture. Sociolinguistic aspects

of English have gained prominence due to the increasing global demand for communication and technology. Despite India's multilingual context, English functions as a second language for all communities. Indian English has evolved as one of the English language variants, uniquely intertwined with the country's society, culture, and people (8). In India, English serves a distinct purpose compared to its role in the United Kingdom or other native English-speaking nations. Given India's cultural diversity and multilingualism, English holds a specific position and pace within its socio-economic and cultural landscape.

English Proficiency for National Development

English proficiency holds significant importance for Indian scientists and engineers, considering its prevalence in the realms of science and technology. The majority of scientific articles and journals globally are published in the English language (9). English proficiency is crucial for academics and research organizations, as it provides access to international scientific literature. The international language of science (EILS) is English, granting privileged status to proficient English users. To maintain a competitive edge in science and technology, India must ensure that its youth possess proficiency in the English language.

Even though India holds the second position worldwide in the number of English speakers, it has experienced a decline in its previous advantages in voice processing BPOs (Business Process Outsourcing) and the provision of English teachers to nations like China, Turkey, and South Korea. If Indian engineers and scientists do not proactively enhance their English language skills, the country may face further setbacks (10).

Enhancement of Personal Growth via Proficiency in English

Historically, engineers were thought to be accountable for technical tasks conducted behind the scenes, demanding only limited English proficiency. Consequently, little emphasis was placed on developing English communication skills in engineering curricula. However, as India becomes a global economic player, Indian businesses prioritize

the English proficiency of job applicants. To succeed in a competitive global job market, strong English communication skills are essential alongside domain expertise (11). Technical knowledge alone is insufficient for professional advancement. Proficiency in the English language is crucial for academic achievement, given that English serves as the instructional medium for the majority of technical and scientific courses in higher education institutions in India. English proficiency significantly influences students' comprehension and knowledge acquisition within their respective fields of study (12).

Survey of Indian Engineer Aspirants' English Proficiency

Our study aims to analyse the existing language skills of aspiring engineers and their attitudes towards English as a Second Language (ESL). To achieve this goal, we conducted a comprehensive literature review focusing on language proficiency and communication skills. Additionally, we gathered secondary data on the English language aptitude of students pursuing engineering studies in India. Subsequently, a field survey was undertaken to gather direct and firsthand insights. A survey by Aspiring Minds, an employability measurement and recruitment firm, revealed that 43 percent of engineers have poor English speaking and writing skills, including grammar (13). Another survey by the same firm found that 25% to 35% of engineers struggle with understanding written or spoken English, encompassing routine discussions, scholarly presentations, and written materials.

As per a different investigation, a mere 3.25 percent of engineering graduates are deemed prepared for the software industry, highlighting that the majority necessitate additional training. Approximately 73 percent of participants in the examination were judged as unable to engage in English conversations, while 95 percent were identified as lacking technical skills (14). These findings highlight the substantial barriers posed by inadequate English language skills to the growth of entrepreneurship and IT businesses in India. The economic progress of the country is also at risk due to this factor.

An Examination of the Syllabi Employed Thus Far

This research examined the English language curricula of the Central Board of Secondary Education (CBSE), the Indian Certificate of Secondary Education (ICSE), and the various Boards of Secondary Education (BSE) across Indian states. These curricula aim to enhance students' communication and academic language skills, emphasizing grammar, structure, vocabulary, and the ability to express thoughts and ideas in English. Despite the comprehensive syllabi developed by different education boards, English language proficiency remains a challenge in Indian schools and colleges (15). In regional and vernacular medium schools, English is often perceived as a foreign language, leading to surface-level performance, rote learning, and limited meaningful engagement. Many English language teachers in regional medium schools possess limited English proficiency and resort to code-switching, making it challenging for students to convey their thoughts coherently in both written and oral forms.

This decoding-reinterpreting process, where students translate from their mother tongue to English, often results in significant misunderstandings and communication failures. Consequently, students from such backgrounds face difficulties when transitioning to higher education, where English is the medium of instruction (16). Therefore, improving English competency is essential, particularly in the context of technical and scientific education in India.

Conceptual Framework

The conceptual framework guiding this study is deeply rooted in the assessment of ESL (English as a Second Language) proficiency among Indian engineering students within the sphere of higher education. Drawing from seminal theories of language acquisition, notably Krashen's (17) principles emphasizing meaningful interaction and comprehensible input in language learning processes, the study seeks to elucidate the complexities and strategies involved in mastering English as a second language. Furthermore, the research is firmly anchored in the Indian National Curriculum Framework for School Education, which serves as the blueprint for instructional strategies and materials in English language education for engineering learners. This framework not only provides a structured approach to language education but also takes into account the diverse linguistic and socio-economic backgrounds of students while aligning with broader educational objectives of fostering linguistic diversity and inclusivity within Indian classrooms.

Research Scope

The research scope is multifaceted, aiming to comprehensively assess ESL proficiency and its ramifications for higher education among Indian engineering students. It encompasses the evaluation of ESL proficiency through the utilization of standardized assessments such as IELTS practice tests, with a particular emphasis on students hailing from both regional and English medium educational backgrounds. Additionally, the study delves into the pivotal role played by the Indian National Curriculum Framework and instructional materials in nurturing English language skills among engineering learners. Through comparative analysis, the research endeavours to discern differences in ESL proficiency across diverse educational backgrounds, employing random sampling methods to ensure the representation of varied student demographics. Ultimately, these investigative efforts are geared towards identifying challenges and opportunities in enhancing ESL education within Indian higher education institutions, thereby contributing to the broader discourse on language education and proficiency in the Indian context.

Objectives**:**

1. Assessing English Proficiency: Evaluate the current English language proficiency levels among Indian engineering students.
2. Understanding the Significance of English: Investigate the importance of English language skills for Indian engineers from national, academic, and professional perspectives.
3. Analysing Educational Frameworks: Examine the effectiveness of the National Curriculum Framework, including the Three Language Formula, and assess the role of English language curricula in fostering language proficiency among Indian students, while also considering

the challenges posed by heterogeneous classrooms.

Null Hypotheses:

1. H_01: There is no significant difference in English language proficiency among Indian engineering students across different educational backgrounds.
2. H_02: There is no significant difference in the perception of the importance of English language skills among Indian engineers when examined from national, academic, and professional viewpoints.
3. H_03: The National Curriculum Framework, including the Three Language Formula, and the English language curricula do not significantly affect English language proficiency levels among Indian engineering students, and heterogeneity in classrooms has no bearing on language acquisition.

Methodology

The methodology section of the research is presented herein, encompassing key aspects such as the research design, research setting, instruments used, and the duration of the study.

Research Design

Under quasi experimental study, this research adopted quantitative research methodology to facilitate the attainment of research outcomes. With a specific emphasis on the English language proficiency of engineering students from regional and English medium school backgrounds in India, the study employs a descriptive approach during the intervention phase to explore the findings in greater detail.

This research utilized the IELTS sample test paper to evaluate proficiency in all four aspects of the English language: listening, speaking, reading, and writing (LSRW), within the context of second language acquisition. The chosen language proficiency assessments from the IELTS platform, covering all four skills (LSRW), were integrated into an intervention designed to alleviate language deficiencies. By employing these tests, the study aims to evaluate their efficacy in tackling the obstacles encountered in learning English as a second language, particularly among individuals from both Tamil and English medium backgrounds.

Research Setting

Following an extensive review of relevant literature, our attention turned to examining the current landscape of English language teaching and learning within Indian engineering institutions. The research was conducted at VIT (Vellore Institute of Technology) University in Vellore, India, specifically focusing on second-semester mechanical engineering students, with a sample size of 150. Utilizing a purposive sampling method under non-probability sampling unit, the participants were selected from broader target population.

The students we selected were categorized into two groups based on their educational backgrounds: one group consisted of those who studied in a regional language from elementary school to higher secondary, and the other group comprised students who received their education in English for a similar duration.

Materials and Research Instruments

To gather the requisite data for this investigation, a diverse array of tools and instruments were employed. The research incorporated an English language proficiency assessment following the format of the IELTS (Academic) exam. This examination utilized sample IELTS test papers (IELTS Sample Test) obtained freely from online sources. Multimedia resources including audio recordings, online sources, and word/Excel office software were utilized, with the researchers acting as the main instruments for data collection.

The performance of learners in the tests was evaluated using SPSS (Statistical Package for the Social Sciences) software, and the results were presented for both regional and English medium groups utilizing Parametric Test (Independent t-test). This structuring was based on the challenges encountered by adult learners in acquiring language skills in a foreign or second language, ensuring a thorough understanding of the study's content and findings regarding the effects of language acquisition.

Assessment Criteria

The research incorporated an English language proficiency assessment modeled on the IELTS (Academic) examination. This evaluation assessed

four language skills using a rubric derived from standardized IELTS band score tests. This rubric, emphasizing "LSRW," aids in gauging proficiency and utilization of language. It is probable that the assessors accessed this rubric readily available on the internet.

IELTS Band Scores assess language proficiency on a scale of 1 to 9 (Assessment Criteria): 1. Non-User, 2. Intermittent User, 3. Extremely Limited User, 4. Limited User, 5. Modest User, 6. Competent User, 7. Good User, 8. Very Good User, 9. Expert User.

To bolster the authenticity of the gathered data. Tabular presentations were employed to showcase the outcomes of tests.

Duration of the Research

The research intervention spanned three weeks, commencing in January 2023. This timeframe was evenly allocated to accommodate the various research instruments and activities integrated into the intervention.

Results and Discussion

English Language Proficiency Test

The findings of the study indicate that engineering students who come from English-medium schools achieved slightly better results compared to their peers from vernacular medium schools. Although the intervention addressed both groups equally in terms of inputs, a significant difference exists in the outcome between the two groups. To substantiate this hypothesis, researchers administered a test to all 150 samples. The results show that those from the vernacular medium exhibited a deficiency in comprehension abilities necessary for successful test completion. The further details are given below.

Table 1 provides data on the English language proficiency test results using the IELTS Sample Test. A total of 150 students were examined. Among them, 87 students (which is 58%) studied in English Medium (EM), while 63 students (making up 42%) were in Vernacular Medium (VM). Here's an interpretation and analysis of the results:

Table 1: Frequency Rate - IELTS Sample Test

Band Score (IELTS)	EM Frequency	VM Frequency	Overall Valid Percent
Expert User (9)	2	Nil	1.33 %
Very Good User (8)	7	1	5.33 %
Good User (7)	11	3	9.33 %
Competent User (6)	17	5	14.66 %
Modest User (5)	31	7	25.33 %
Limited User (4)	16	26	28 %
Extremely Limited User-(3)	3	15	12 %
Intermittent User (2)	Nil	6	4 %
Non-User (1)	Nil	Nil	Nil

Non-User (1): Limited ability, isolated words; Intermittent User (2): Basic communication, short phrases; Extremely Limited User (3): Understands broad meaning, frequent communication failures; Limited User (4): Basic competency struggles with complexity; Modest User (5): Limited mastery, some errors; Competent User (6): Generally competent, occasional mistakes; Good User (7): Functional grasp, occasional mistakes; Very Good User (8): Nearly flawless, minor errors; Expert User (9): Total mastery, fluent and correct language use.
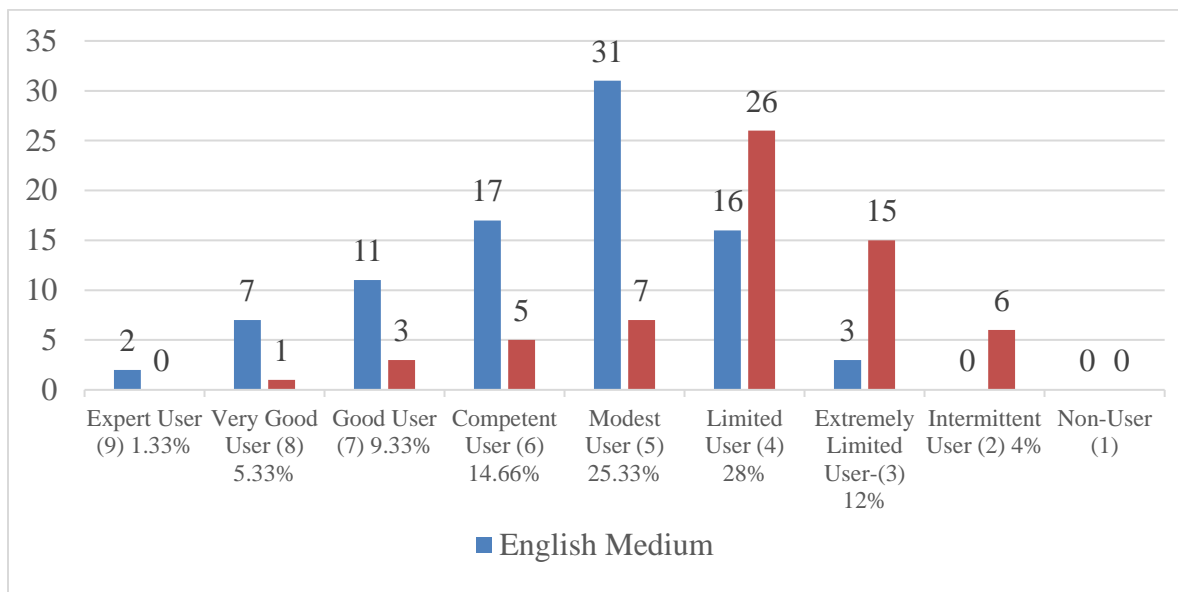
Figure 1: Frequency Rate - IELTS Sample Test: Based on Table 1

From the visual rendering of table 1 and figure 1, the data has been interpreted on several concerns. They are,

- The data indicates that a significant portion of students falls within the "Limited User" category (Band Score 4), with 28% coming from the English medium and 41% from the vernacular medium. This suggests that a substantial number of students have a limited level of English proficiency.
- The "Modest User" category (Band Score 5) also has a notable representation, with 25.33% of students falling into this category. It's worth noting that students from the English medium (31) perform slightly better in this category compared to those from the vernacular medium (7).
- The "Competent User" category (Band Score 6) has 14.66% of students, indicating that a moderate number of students have a reasonable level of English proficiency.
- A smaller percentage of students are classified as "Extremely Limited User" (Band Score 3),

primarily from the vernacular medium, indicating a significant language proficiency gap.
- There are no students in the "Expert User" category, and only a few in the "Very Good User" category.

Overall, the results show that there is a wide range of English language proficiency among the tested students, with a majority falling into the Limited User and Modest User categories. This data can be used to identify areas for improvement in English language education and tailor instruction to the specific needs of students from different language backgrounds.

SPSS Analysis

The provided SPSS output in table 2 and 3 presents the results of a t-test comparing the English language proficiency of two groups who have different educational background among the engineering students: they are Tamil (vernacular) and English medium. The interpretation and analysis of the results in relation to their English language proficiency are also discussed below.

Table 2: Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Marks	Tamil Medium	63	4.05	1.325	.167
	English Medium	87	5.53	1.363	.146

Table 3: Independent Samples Test

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Marks	Equal variances assumed	-6.647	148	.000	-1.481	.223	-1.921	-1.041
	Equal variances not assumed	-6.677	135.872	.000	-1.481	.222	-1.920	-1.042

t-test for Equality of Means: The t statistic is -6.647 with 148 degrees of freedom and a p-value of 0.000 (Sig.). When equal variances are assumed, this indicates a significant difference in means between the two groups. The t statistic is -6.677 with 135.872 degrees of freedom when equal variances are not assumed, and the p-value remains 0.000, indicating a significant difference in means; *Mean Difference:* The mean difference between the Tamil medium and English medium groups is approximately -1.481; *Standard Error Difference:* The standard error of the mean difference is approximately 0.223; *95% Confidence Interval of the Difference:* The confidence interval for the mean difference ranges from -1.921 to -1.041.

The results of the t-test indicate a statistically significant difference in English language proficiency between Tamil medium and English medium background engineering students. Specifically:

- The English medium background students have a significantly higher mean English language proficiency score (5.53) compared to Tamil medium background students (4.05).
- The negative mean difference of approximately -1.481 suggests that, on average, English medium background students score 1.481 units higher in English language proficiency than Tamil medium background students.
- The confidence interval of the difference (-1.921 to -1.041) suggests that we can be 95% confident that the true difference in means falls within this range.

In practical terms, these results imply that English medium background engineering students, on average, have a higher English language proficiency level compared to their Tamil medium counterparts. This difference could be attributed to factors such as the medium of instruction and exposure to English language materials during their education. Educational institutions may consider providing additional language support or English language proficiency enhancement programs for Tamil medium background students to help bridge this proficiency gap.

Descriptives: Analysis

The provided descriptive statistics summarize the data related to English language proficiency scores of both Tamil and English medium background engineering students. Here's an interpretation and analysis of the results:

Table 4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Participants	150	1.00	2.00	1.5800	.49521
Marks	150	2.00	9.00	4.9067	1.52978
Valid N (listwise)	150				

The "Participants" variable appears to be a categorical variable with two categories represented by values 1.00 and 2.00. These values likely represent the two groups, such as "Tamil medium"

and "English medium" background students. The mean of 1.5800 suggests that, on average, there's a relatively even split between these two groups, as the mean is close to the midpoint between 1.00 and 2.00.

The "Marks" variable represents the English language proficiency scores of the students. Here's the analysis:

- The minimum score is 2.00, indicating the lowest level of proficiency.
- The maximum score is 9.00, indicating the highest level of proficiency.
- The mean score is 4.9067, which is below the midpoint between the minimum and maximum values. This suggests that, on average, the students' English language proficiency falls below the middle of the proficiency scale.
- The standard deviation of 1.52978 indicates some variability in the scores, with scores ranging from 2.00 to 9.00.
- The descriptive statistics provide an overview of the English language proficiency scores of both Tamil and English medium background engineering students:
- On average, the students have a moderate level of English language proficiency, as indicated by the mean score of 4.9067.
- The scores range from a minimum of 2.00 to a maximum of 9.00, suggesting a wide variation in English language proficiency among the students.
- It's important to note that the "Participants" variable is not fully described in the provided information, but it appears to be a categorical variable representing the two groups of students based on their language backgrounds.

In gist, these statistics indicate that, on average, engineering students from both Tamil and English medium backgrounds have moderate English language proficiency levels. However, there is a considerable range in proficiency levels within each group, which may have implications for educational support and curriculum planning to address the diverse language proficiency needs of the students.

Multilingual Classroom Settings: Analysing Language Study in Indian Higher Education

India, with its diverse linguistic landscape, witnesses a multitude of languages used for communication within individual states. This linguistic diversity is attributed to distinct language policies, political ideologies, cultural influences, and other factors prevalent in each state (18). As a result, India hosts a significant population engaged in bilingual or multilingual social environments. Many children receive their education in their native language, at least up to the higher secondary level (19).

In certain states, the medium of instruction continues to be the regional language even at the undergraduate level. Typically, English is introduced as a compulsory subject either at the early or late primary levels in schools where education is conducted in the first language until class twelve. Simultaneously, several Indian states mandate primary school children to learn Hindi for interstate communication from the primary education stage onwards. Additionally, students may opt to study Sanskrit as an elective subject during some part of their school education. Both at English-medium and regional language-medium schools, students learn their native language, Hindi, and English. English remains the primary language of instruction throughout the academic year, while Sanskrit is taught as an additional language. Thus, it is crucial for all Indian schools, regardless of whether they teach in the vernacular or English medium, to be multilingual (20).

Various factors, such as the diversity of a country or linguistic region, distinct social, political, and religious perspectives, or the aspiration to foster national identity (21), influence the use of multiple languages in schools, both as subjects of study and the designation of one language as a lingua franca. Therefore, English, as the lingua franca of higher education, is incorporated into the academic curriculum in late elementary schools to enhance students' proficiency. Early elementary schools choose English as the academic lingua franca, primarily aiming for greater proficiency and indirectly emphasizing social status enhancement.

The selection of languages as first, second, and third languages, along with the academic lingua franca, varies across states. In some, the primary language taught is the local tongue, with English and Hindi as

second and third languages. In others, this arrangement is reversed. The rigor of study and evaluation of language proficiency in this multicultural environment of Indian schools is considered significant (19). This paper aims to investigate, elucidate, and rationalize the levels of study and evaluation patterns employed in multilingual educational contexts.

Recommendations and Suggestions

This study primarily delved into the challenges linked to the broader teaching-learning-evaluation process in the realm of pursuing higher education. To arrive at solutions, it is crucial to consider specific questions. Firstly, why do we study English? Secondly, how can we enhance the language-learning experience to meet academic and communication objectives? The responses to these questions have been addressed in the preceding sections. Students progress at different rates influenced by factors such as age, health, motivation, attitude, personality, learning style, and prior education (22).

A significant observation is that many Indian students in Regional/vernacular-medium schools lack sufficient exposure to the language, impeding the development of conversational and interpersonal English skills during their higher studies. Consequently, these students may require an extended period to acquire the necessary abilities for effective learning in a traditional classroom setting. On the flip side, learners with substantial exposure to the English language before attending tertiary education (higher education) tend to integrate more seamlessly into regular classrooms, necessitating less assistance and time. Building on these insights, the following recommendations are proposed:

- Initiate English learning at a young age to ensure proficiency by the first grade, facilitating understanding of English books.
- Select appropriate study materials prioritizing communicative competence over rote learning.
- Emphasize learning to read and converse with comprehension in elementary school English classes.

In the realm of higher education, a significant challenge arises as numerous students opt to discontinue their academic pursuits due to inadequate English proficiency. This predicament is exacerbated by the fact that the medium of instruction in higher education curricula is predominantly English. Eaton's and Shiobara's (23, 24) research underscore the importance of investing at least 10,000 hours to attain English fluency, a concept popularized by Gladwell (25). However, the harsh reality is that rural students are confronted with a meagre 2,400 hours of exposure over 10 years, primarily attributed to the constraints of vernacular medium education in India. This deficiency in language exposure leaves these students falling short of the expected fluency levels by the time they reach 12th grade, with only approximately 180 working days available.

The urgency to enhance English-speaking skills is particularly pronounced among Engineering-level students, given the pivotal role language plays in unlocking future job opportunities. This imperative becomes even more critical in rural areas where employment prospects often hinge on proficiency in the English language (26). Consequently, adolescents in such settings face a unique set of challenges on their language learning journey.

Adolescents encounter multifaceted hurdles, including the pervasive influence of peer pressure, gender-related shyness and anxiety, self-realization concerns, self-expression barriers, motivation disparities, and persistent pronunciation issues. These challenges collectively contribute to a complex landscape wherein fostering effective English-speaking skills becomes not only an educational necessity but also a catalyst for personal and professional growth.

In addressing this multifaceted issue, a comprehensive approach is imperative. Educational institutions need to reassess and augment language programs to provide more equitable exposure to English language learning, particularly in rural settings. Additionally, recognizing and addressing the psychological and social challenges faced by adolescents can contribute significantly to fostering a conducive environment for language development. By addressing these interconnected facets, we can work towards bridging the gap in English proficiency, ensuring that students are adequately equipped to navigate both the academic and

professional landscapes with confidence and competence.

Despite technical institutions offering English language programs, students' communication skills often do not improve due to insufficient engagement with the language or inadequacies in the curriculum. Additionally, the absence of qualified English teachers at all levels exacerbates learning difficulties, particularly when teachers lack proficiency in English. To address this, the following recommendations are suggested:

- Ensure English instructors possess at least IELTS level-7.5 competence to be effective in their role.
- Consider making TESOL programs mandatory for teachers and facilitators in all levels of educational institutions.
- Mandate that teachers of various subjects undergo assessments such as IELTS/TESOL or any globally recognized language competency test. This initiative aims to expand students' language learning experiences beyond the confines of English classrooms.

This approach is essential as students' language proficiency should extend beyond English classrooms to other disciplines assessed in qualifying tests.

Conclusion

The consideration of English should extend beyond being merely a subject to a broader perspective of language. Consequently, the conclusion emphasizes the imperative need for a curriculum that optimizes learning for all students, recognizes and celebrates diversity, and engages them in intellectually rigorous experiences. Such a curriculum should explicitly guide students on what they will study and how they will be evaluated, employing various teaching methods to achieve diverse educational objectives. The successful implementation of these elements is contingent on effective planning, teaching, evaluation, and reporting systems within the curriculum.

In addition to this curriculum framework, the conclusion advocates for providing every student with the opportunity and a supportive classroom environment to actively learn English and attain grade-level proficiency in alignment with curricular requirements. It is suggested that schools and educators exert endeavours to guarantee that every student can avail and succeed in the educational content delineated in the syllabus materials. This entails possible modifications to curriculum development, crafting of instructional materials, structuring of classroom layouts, facilitating appropriate learning encounters, and adjusting teaching approaches and evaluation methods.

The call for a flexible curriculum that supports teachers in responding proactively to students' educational needs is underscored. Communication skills, identified as crucial in engineering and industrial job markets, are highlighted, suggesting a minimum competency level requirement for students aspiring to enrol in graduate engineering programs. The use of international English language competence testing systems, such as IELTS, is recommended as a potential criterion for admission to these programs.

Furthermore, the conclusion advocates for the modification of college curricula to encourage students' active participation in discussions and academically enriched language interactions. English classes at engineering institutions should also elevate the teaching of technical and business communication. This, it is argued, will contribute to achieving the objectives of language study more effectively.

In the context of the twenty-first century India, where proficiency in the English language is increasingly valued (21), the conclusion positions a strong command of English as an essential skill for success in the competitive realms of commerce and professions on a global scale. The proposal encourages the utilization of digital resources in schools, colleges, homes, and society at large to enhance teaching and learning processes. The integration of digital technologies is seen as instrumental in fostering critical thinking, inquiry-based learning, and teamwork, ultimately making teaching, and learning more enjoyable and accessible. Ultimately, the researchers emphasize that fostering proficient English language users is integral to realizing the vision of a Global India.

Abbreviation

Vernacular Medium (VM); English Medium (EM); Word Count Per Minuit (WCPM); English as Second Language (ESL); English Language Teaching (ELT); Industry Readiness Index (IRIX); Mother Tongue (L1 or MT); Second Language (L2 or SL); Listening, Speaking, Reading, and Writing (LSRW); National Council of Educational Research and Training (NCERT); Basic Interpersonal Communicative Skills (BICS); Cognitive Academic Language Proficiency (CALP); International English Language Testing System (IELTS); Test of English as a Foreign Language (TOEFL); Indian Certificate of secondary Education (ICSE); Central Board of Secondary Education (CBSE); English as a foreign language (EFL); British Broadcasting Corporation (BBC); Business Process Outsourcing (BPO); English as an International Language of Science (EILS)

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Author Contributions

R. Robert - conceptualized, designed the methodology, developed software, validated the results, conducted formal analysis, investigated, secured resources, curated the data, and drafted the manuscript; S. Meenakshi - reviewed and edited the manuscript and provided supervision throughout the research process.

Conflict of Interest

The authors affirm no conflict of interest.

Ethics Approval

This study did not require ethical review due to anonymized data and informed consent.

Funding

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