English Language Needs Analysis of Indian Engineers: A Study on Workplace Communication Requirements

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Abstract

English proficiency plays a crucial role in professional communication for engineers in India, as industries increasingly operate in globalized environments. This study investigates the English language needs of Indian engineers by analyzing their perceptions of the importance and frequency of language skills—listening, speaking, reading, and writing—required in their workplaces. A survey was conducted among 50 engineers from diverse industries across India, with additional insights obtained through interviews. The findings indicate that while **reading** is perceived as the most important and frequently used skill, **listening and writing** also hold significant relevance. Despite being ranked lower in importance and frequency, **speaking skills** remain critical for workplace interactions, particularly in reporting work to superiors and engaging with suppliers. The study highlights the gap between industry expectations and university curricula, emphasizing the need for targeted English language training programs for engineers. The findings suggest that technical institutions must incorporate industry-specific English training, focusing on **real-world communication scenarios**, **technical documentation**, and **oral presentation skills** to enhance the employability and effectiveness of Indian engineers.

Keywords: English for Specific Purposes (ESP), Engineering Communication, Workplace English, Language Needs Analysis, Technical Communication, Indian Engineers, English Proficiency, Professional Communication.

Introduction:

India is a diverse and multicultural society with a vast array of ethnic groups, languages, traditions, and cultures. Each state in India has its own regional language; however, Hindi serves as the widely spoken language, and English holds the status of an official language, particularly in administrative, academic, and business settings. In the field of engineering, English is predominantly used as the medium of instruction and professional communication. Despite this, many Indian engineers face challenges in using English effectively in workplace settings, even though they possess strong technical knowledge and competencies.

Some of the common difficulties faced by Indian engineering students in mastering English include grammar, vocabulary, pronunciation, and understanding informal expressions such as slang and colloquialisms. Additionally,

engineering students may struggle with the complexity of English grammar structures, technical vocabulary, and variations in the language that are not commonly found in engineering texts. As engineering becomes increasingly globalized, proficiency in English has become essential for effective cross-cultural communication, highlighting the need to integrate English language and communication skills into engineering curricula.

Robinson (1991) emphasized that engineering students have specific English language requirements, and a key principle of English for Specific Purposes (ESP) is to equip them with language skills relevant to their professional field. Since ESP is increasingly focused on syllabus design, materials development, and teaching methodologies, it is crucial to consider the context in which students will be applying their language skills. In the Indian context, bridging the gap between industry expectations and university curricula is imperative to enhance employability and ensure that engineering graduates are well-prepared for the professional world.

Rezaee and Kazempourian (2011) advocated for the importance of conducting a detailed language needs analysis before designing an effective English language course for engineering students. This is particularly relevant in India, where engineering students often come from diverse linguistic backgrounds and may have varying levels of exposure to English.

A comprehensive English language curriculum for engineering students should cover the four fundamental language skills—listening, speaking, reading, and writing. Each of these skills comprises several sub-skills, such as technical writing, report drafting, presentation skills, and workplace communication, which require further exploration to determine their relevance to the industry.

This paper presents findings from a needs analysis conducted by a research team at an engineering institution in India, focusing on the language requirements of engineers in various industries, particularly in technology hubs such as **Bengaluru, Hyderabad, Pune, and Chennai.** The objective of this study was to identify the actual English language competencies required by engineering graduates in professional environments and how universities can enhance their curricula to meet these industry demands. The insights from this research could contribute to curriculum reforms, syllabus design, and the development of industry-oriented English language modules, ensuring that Indian engineering students are equipped with the necessary communication skills to excel in the global job market.

Different Types of Language Needs Analysis

To determine the language skills required by learners in their prospective professional or academic environments, it is essential to conduct a thorough needs analysis. This analysis should take into account learners' existing knowledge, their perspectives on their language requirements, and the practical limitations of the teaching framework. The insights gathered from this process help shape the content and methodology of English for Specific Purposes (ESP) courses.

As outlined by Basturkmen (2010), the needs analysis process includes the following key components:

- **Target Situation Analysis** – Identifying the ideal linguistic competencies and skills that learners should possess to perform effectively in their professional roles.
- **Discourse Analysis** – Examining the specific language patterns and communication styles commonly used in engineering industries.
- **Present Situation Analysis** – Assessing learners' current proficiency levels and determining the gaps in their language skills required for workplace communication.
- **Learner Factor Analysis** – Understanding learners' motivation, learning styles, and their own perceptions of their language needs.
- **Teaching Context Analysis** – Evaluating the educational environment, resources, and constraints that influence the delivery of the language course.

Needs analysis is basically a process done before creating a course to understand what should be taught. It helps teachers or course designers decide what topics to cover, which language skills are important, and how to teach them effectively.

Needs analysis is a process carried out before designing a course to understand what should be taught and how. It helps teachers or course developers decide on the key focus areas, the necessary language skills, and the best teaching methods. The three main aspects of needs analysis include target situation analysis, which identifies the specific language skills required in the workplace; present situation analysis, which assesses learners' current English proficiency; and learner factor analysis, which considers students' motivation, learning styles, and perceived needs. This study specifically focused on target situation analysis, as it helps determine the actual English language skills engineers need in their professional environments, ensuring that the course content is practical and relevant to their job requirements.

3. Methodology

3.1. Sample

The participants of this study were 50 engineers from different regions of India, all of whom had between 1 to 6 years of work experience in various engineering companies. The study was conducted online, where questionnaire was randomly emailed to a population of approximately 100 engineers working in over 20 national and multinational engineering firms across India. The companies included well-established names such as **Tata Steel Ltd., Arcelor Mittal Nippon India, Arctech Ltd., Zepto, Federal Bank Ltd., SAGE Group India and other organizations working in India.**

A total of 50 engineers from diverse domains, including mechanical, supply chain management, manufacturing, construction and maintenance engineering, voluntarily completed and submitted the questionnaires. These companies were selected based on two key factors: (1) their status as recognized national and/or multinational firms operating in India, and (2) the professional networks and industry connections established between engineering faculty members at various Indian universities and their industry contacts.

3.3. Instrument

This study employed a self-developed survey questionnaire to assess the English language skills required by engineers and the professional scenarios in which English is commonly used in Indian engineering workplaces. The survey was designed based on three key sources: (1) a review of previous studies on language needs analysis, (2) feedback from informal discussions—both verbal and via email—with engineers and human resource managers, and (3) insights from interviews with engineering faculty members to identify the most frequent English communication situations encountered in Indian engineering industries. Based on these inputs and considering the study's research objectives, the questionnaire included items that explored engineers' self-assessment of their English proficiency, their perceptions of the importance of different language skills and sub-skills in their job roles, and the frequency with which these skills are used in workplace communication. Additionally, the questionnaire covered aspects related to oral communication functions across various professional interactions.

Before being distributed to participants, the questionnaire and interview questions underwent continuous consultation with engineering faculty members who had prior industry experience. A pilot test was conducted with five engineering lecturers at a reputed Indian university to ensure the questionnaire's reliability and validity. Constructive feedback from the pilot test was incorporated into the final version of the survey.

The questionnaire consisted of three sections:

- **Section A** gathered background information about the engineers and their self-assessed proficiency in the four key language skills **LSRW** (listening, speaking, reading, and writing).

- **Section B** had two sub-sections: (i) the importance of different English language skills and sub-skills as perceived by engineers in their workplaces, and (ii) the frequency with which engineers used these language skills in their job roles.
- **Section C** focused on the frequency of oral communication functions across different levels of personnel within the workplace.

Except for the background information section, all questions were designed using a **Likert-type scale**. In Section A, respondents rated their proficiency in each language skill on a scale from 1 ("extremely poor") to 5 ("very proficient"). In Section B, the importance of each skill/sub-skill was rated from 1 ("not important at all") to 5 ("very important"). Sections B and C also included frequency-based ratings from 1 ("never") to 5 ("very often") to assess how often engineers used specific English skills at work.

Additionally, a follow-up **interview session** was conducted to validate the findings from the survey. A sample of **five engineers** was selected from the total respondents based on the following criteria: (1) at least one year of work experience, (2) a minimum English proficiency level of pre-intermediate, and (3) availability for the interview session. During the interview, four of the respondents demonstrated an intermediate level of English proficiency, while one exhibited advanced proficiency. Although no formal test was conducted, their language proficiency was briefly assessed based on their fluency and accuracy in spoken English during the interview.

Each respondent was asked the following five questions:

1. How important are English language skills for engineers at work?
2. What language problems do engineers usually face in the workplace?
3. Which English skills do you consider most important for your job?
4. Which English skills do you use most frequently at work?
5. How often do you communicate in English at work, and with whom do you use it for what purposes?

Company	Gender	Age	Years of Working	English Proficiency Level
Tata Motors	F	29	5 - 6 years	Intermediate
Larsen & Toubro (L&T)	M	30	> 6 years	Advanced
Siemens India	M	25	< 2 years	Intermediate
Bharat Heavy Electricals Limited (BHEL)	M	31	> 6 years	Intermediate
Mahindra & Mahindra	M	32	> 6 years	Intermediate

Both questionnaires and interview are used to explore the importance of language skills and areas
as well as engineers' opinions of needs. The analysis and findings may hopefully assist language
instructor(s) to generate an overview of teaching materials that aims to increase students' attention to, and usage
of English language skills in different types of context at engineering workplace.

4. Findings and Discussion

4.1. Engineers' Background Information and Their Perceived Ability in English

As illustrated in **Figure 1**, the majority of respondents (21) have **two years or less** of work experience, while only **three respondents** have been working as engineers for at least **3 to 4 years**. Slightly more than half of the respondents (26) have accumulated **5 to 6 years** of experience in the engineering field.

Among these engineers, **mechanical, manufacturing, and process engineering** are the most common fields, with 21 engineers working in these domains. Less than one-third of the respondents are employed in **maintenance, quality systems, instrumentation, electrical, and project engineering** roles. The respondents represent professionals from various **Indian industrial sectors**, including **manufacturing, Logistics and supply chain, Computer Science, electrical and electronics, and construction**. The findings indicate that engineering professionals across different specializations require **English proficiency** to varying degrees, particularly in technical communication and workplace interactions.

Figure 1: **Respondent's work experience in years**
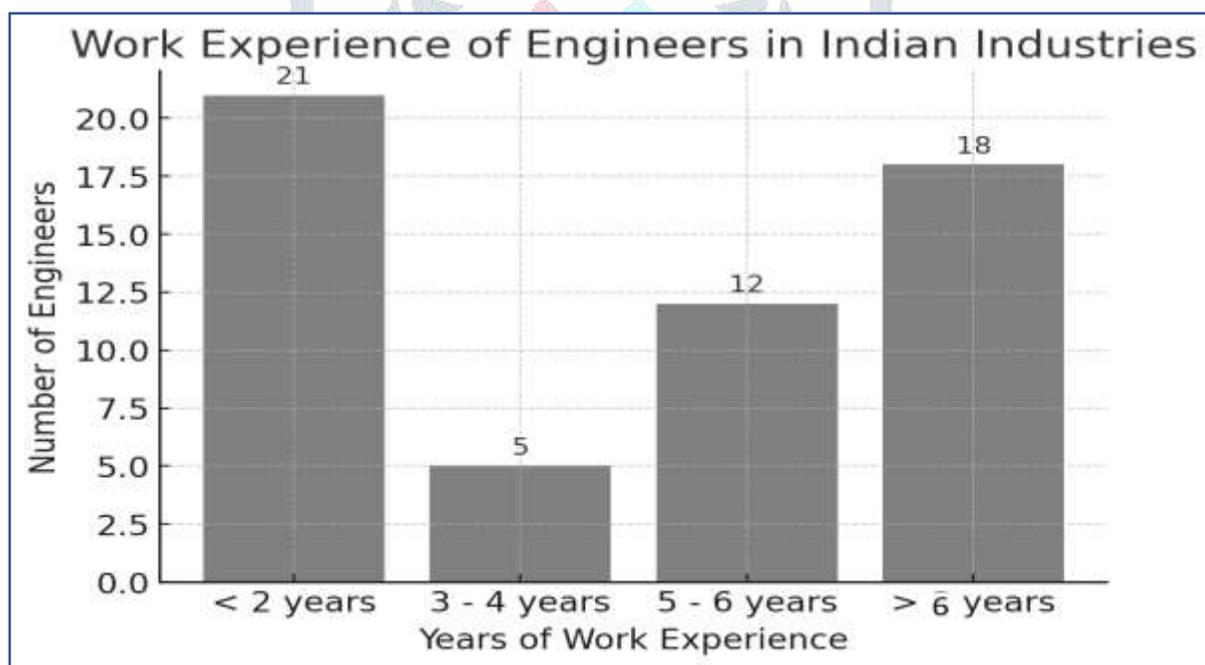
According to **Table 2**, the engineers' strongest English language skills, as perceived by the respondents, are ranked in the following order: **reading (3.480), writing (3.340), speaking (3.280), and listening (3.120).** Their proficiency in reading could be attributed to the fact that English is a compulsory subject in Indian schools for at least **10–12 years**, starting from primary education. However, this does not necessarily indicate that Indian students develop strong English reading habits, as much of their reading motivation stems from academic requirements rather than personal interest.

Unlike school students, engineers are likely driven to improve their reading skills due to **occupational demands** and the dominance of English in the **engineering and technology sectors.** Furthermore, their continuous exposure to technical documents, manuals, and industry reports in English might have contributed to their reading proficiency. However, the findings suggest that while most engineers demonstrate competence in **reading and writing**, many may need to improve their **listening and speaking** skills to enhance workplace communication, particularly in verbal interactions such as meetings, presentations, and client discussions.

Table 2: The Ability in English as Perceived by Engineers

English Language Skill	No (n = 50)	Mean	SD (Standard Deviation)
Listening	50	3.120	0.824
Speaking	50	3.280	0.904
Reading	50	3.480	0.909
Writing	50	3.340	0.848

4.2. The Perceived Importance of English Language Skills for Engineers

This section presents the engineers' views on how important different English language skills are for their work. As shown in Table 3, the average rating for reading (4.167) and listening (4.112) is higher than 4.0, while speaking (3.938) is slightly lower. However, this does not mean that speaking is not important—it just suggests that reading and listening skills are more frequently required in engineering jobs.

Previous studies by Goh and Chan (2004) suggested that speaking and writing are the most crucial skills, but similar to Rezaee and Kazempourian's (2011) findings, engineers in this study rated reading and listening as more significant. Similarly, Kaewpet's (2011) research also found that engineers considered reading to be the most essential skill in their profession.

The study further breaks down specific language skills used in the workplace. Among all sub-skills, the highest-rated were reading technical manuals and documents (4.400), followed by writing reports (4.420), understanding spoken instructions (4.280), and communicating over the phone (4.100). This suggests that engineers value all aspects of English communication, but technical reading and formal writing are the most essential for their jobs.

Engineers believe that English is important for their work, especially reading manuals and reports, understanding instructions, and speaking over the phone. While speaking skills scored slightly lower, it does not mean they are unimportant—just that engineers read and listen more frequently in their daily tasks. Overall, all English skills matter in an engineering career, but reading and listening seem to be used the most.

4.3. The Perceived Frequency of Using Each Language Skill

This section presents the engineers' responses regarding how often they use different English language skills at work. According to Table 4, reading (3.949) was reported as the most frequently used skill, followed by listening (3.820), writing (3.755), and speaking (3.682). This finding aligns with Spence and Liu's (2013) study, which also highlighted that reading and writing were the most common language skills in engineering workplaces, with over 60% of professionals using them regularly. In particular, reading written instructions and advice (52.94%) was noted as a daily requirement in engineering roles. Similarly, Kaewpet (2009) found that reading was the most frequently used skill in the engineering profession.

As outlined in Table 4, the most frequently used English sub-skills at work include reading written instructions/advice (4.220), writing emails (4.140), following spoken instructions (3.940), receiving spoken instructions/advice (3.940), and discussing work-related topics (3.880). The results suggest that engineers regularly engage with both written and spoken English, with a greater emphasis on reading and listening due to the nature of technical work.

Engineers in India use reading and listening skills the most in their daily work, followed by writing and speaking. They frequently read technical instructions and advice, write emails, and listen to spoken instructions from colleagues or supervisors. While all English skills are important, the findings suggest that engineers rely more on reading and listening for their job tasks.

4.4. The Perceived Frequency of Conducting Oral Communication Among Different Personnel

Apart from identifying the importance and frequency of various English language skills, **Splitt (2003)** emphasized that one of the key challenges in **English for Specific Purposes (ESP)** is improving interpersonal communication skills, as engineers interact with different levels of personnel within an organization. It is crucial to understand **who engineers communicate with** and **which language skills they require in the workplace.**

The overall mean results from **Table 5** indicate that **communication with superiors (3.770)** is the most frequent form of workplace interaction, while the least frequent communication is with **colleagues from international branches (3.265).** This suggests that **Indian engineers primarily use English to report their work to managers and supervisors**, rather than for communication with overseas teams.

The most common function of English oral communication was found to be **reporting work to superiors (4.000)** due to **professional requirements** in Indian engineering firms, where English is widely used for **formal discussions, project updates, and work progress reporting.** Additionally, some engineers interact with **expatriate managers or international clients**, which makes English an essential skill. This finding aligns with **Kassim and Ali's (2010) study,** which also reported that **engineers tend to use English more frequently with superiors than with colleagues and subordinates.** Similarly, **Kaewpet's (2009) research** showed that engineers regularly interact with English-speaking supervisors at work, mostly regarding **work completed or in progress.**

According to **Table 5**, **project communication with international colleagues (3.080)** and **negotiating prices with suppliers/contractors (3.080)** were the least frequent functions. However, engineers do communicate in English when discussing **general knowledge (3.460)** and **engineering knowledge (3.420)** with their international counterparts. Instead of price negotiations, engineers primarily engage in discussions about the **technical aspects of products,** including **making inquiries (3.320), asking about product ranges (3.340), and requesting product specifications (3.540).**

The findings indicate that **oral communication in English is fairly common in Indian engineering workplaces,** with higher priority given to **superiors (3.770) and clients/customers (3.410).** Engineers frequently use English to **report work, discuss technical aspects with suppliers, and communicate with clients.** While interactions with **international colleagues and price negotiations** are less frequent, technical discussions and **work-related communication remain essential aspects of English usage in engineering roles.**

Table 3: The Perceived Importance of English Language Skills for Engineers

English Language Skill	No (n = 50)	Mean	SD (Standard Deviation)	Overall Mean
Reading (Importance)				4.167
Reading written instructions/advice	50	4.360	0.631	
Reading field-related articles and books in English	50	3.920	0.601	
Reading project documents	50	4.340	0.658	
Reading technical manuals/documents	50	4.400	0.639	
Reading standards related to the design	50	4.340	0.745	
Reading office documents	50	4.040	0.727	
Reading texts on the computer	50	4.120	0.746	
Reading professional texts	50	3.960	0.807	

Reading notes	50	4.020	0.714	
Writing (Importance)				4.048
Writing emails	50	4.300	0.886	
Writing memo	50	3.660	1.062	
Writing formal letter	50	3.980	0.892	
Writing meeting minutes	50	3.900	0.909	
Making presentation slides	50	3.920	1.007	
Writing project proposal and/or project reports	50	4.020	1.040	
Writing report	50	4.420	0.642	
Making technical specifications for equipment(s)	50	4.180	0.825	
Listening (Importance)				4.112
Following instructions	50	4.280	0.809	
Receiving spoken instructions/advice	50	4.180	0.825	
Listening in meetings/seminars/workshops	50	4.120	0.918	
Listening and understanding contractual, legal, and technical negotiations in English	50	4.060	0.890	
Teamwork interaction	50	3.920	1.027	
Speaking (Importance)				3.938
Giving formal presentations	50	3.880	0.940	
Teamwork interaction	50	3.900	0.931	
Small-talk	50	3.760	0.894	
Discussing work	50	4.080	0.752	
Having contractual and legal negotiations in English	50	3.820	0.962	
Teleconferencing	50	3.900	0.995	
Telephone communication	50	4.100	0.814	
Conflict resolution/responding to complaints	50	4.060	0.818	
Networking	50	3.940	0.818	

Table 4: The Perceived Frequency of Using Each English Language Skill

English Language Skill	No (n = 50)	Mean	SD (Standard Deviation)	Overall Mean
Reading (Frequency)				3.949
Reading written instructions/advice	50	4.220	0.815	
Reading field-related articles and books in English	50	3.540	0.994	
Reading project documents	50	3.920	1.158	
Reading technical manuals/documents	50	4.200	0.756	
Reading standards related to the design	50	4.120	0.918	
Reading office documents	50	3.820	0.983	

Reading texts on the computer	50	4.080	0.900	
Reading professional texts	50	3.800	1.010	
Reading notes	50	3.840	0.997	
Writing (Frequency)				3.755
Writing emails	50	4.140	0.969	
Writing memo	50	3.660	0.982	
Writing formal letter	50	3.620	0.967	
Writing meeting minutes	50	3.560	0.972	
Making presentation slides	50	3.620	1.176	
Writing project proposal and/or project reports	50	3.640	1.064	
Writing report	50	4.020	0.937	
Making technical specifications for equipment(s)	50	3.780	0.887	
Listening (Frequency)				3.820
Following instructions	50	3.940	0.913	
Receiving spoken instructions/advice	50	3.940	0.935	
Listening in meetings/seminars/workshops	50	3.780	0.954	
Listening and understanding contractual, legal, and technical negotiations in English	50	3.720	1.031	
Teamwork interaction	50	3.720	1.126	
Speaking (Frequency)				3.682
Giving formal presentations	50	3.720	1.126	
Teamwork interaction	50	3.680	1.096	
Small-talk	50	3.660	0.872	
Discussing work	50	3.880	1.003	
Having contractual and legal negotiations in English	50	3.600	1.143	
Teleconferencing	50	3.460	1.232	
Telephone communication	50	3.840	1.037	
Conflict resolution/responding to complaints	50	3.720	1.089	
Networking	50	3.580	1.012	

4.5. The Interview Questions and Answers

The online interviews with five respondents were conducted between Sep 14 – Sep 27, 2024, at a local university in India. Each respondent shared their perspectives and experiences after each question was asked.

When asked about the importance of English language skills at work, all five respondents agreed that English is extremely important in their profession. They emphasized that English is not just a tool for communication, but a fundamental language in the engineering industry, particularly for interacting with clients, colleagues, and technical documents.

Regarding the challenge's engineers face with English at work, most respondents mentioned difficulties in both written and oral communication. They expressed concerns about their productive skills, particularly in writing and speaking. This aligns with Table 2, which shows that engineers feel more confident in reading (3.480), a receptive skill, compared to writing (3.340) and speaking (3.280). Several respondents admitted struggling with expressing

or explaining their ideas, while some pointed out that cultural differences and variations in accents also create communication barriers in the workplace.

These challenges highlight the need to consider language barriers when designing learning materials for engineering students. Since both language proficiency and workplace productivity are crucial, English language training programs should not only focus on improving communication skills but also ensure that engineers can perform their tasks efficiently with minimal language-related obstacles.

Table 5: The Perceived Frequency of Conducting Oral Communication Among Different Personnel

English Language Skill	No (n=50)	Mean	SD (Standard Deviation)	Overall Mean
Clients/Customers				3.410
Explaining product range	50	3.420	1.263	
Negotiating price	50	3.140	1.485	
Explaining technical specifications	50	3.720	1.262	
Providing consultancy	50	3.360	1.336	
Colleagues from International Branches				3.2665
Project communication	50	3.0	1.397	

	50	80		
Having small talk on culture exchange	50	3.1000	1.313	
Sharing engineering knowledge	50	3.4200	1.180	
Sharing general knowledge	50	3.4600	1.232	
Superiors				**3.7770**
Project discussion	50	3.7200	1.179	
Giving formal presentation	50	3.5800	1.162	
Meeting	50	3.7800	1.112	
Reporting work	50	4.0000	1.069	
Subordinates				**3.3666**
Giving instructions	50	3.3400	1.255	
Project discussion	50	3.	1.298	

		5 0 0		
Giving formal/informal presentation	5 0	3 . 2 0 4	1.2 91	
Meeting	5 0	3 . 4 2 0	1.3 11	
Suppliers/Contractors				**3. 3 2 0**
Making enquiries	5 0	3 . 3 2 0	1.3 92	
Asking for product range	5 0	3 . 3 4 0	1.3 34	
Asking for technical specifications	5 0	3 . 5 4 0	1.3 58	
Negotiating prices	5 0	3 . 0 8 0	1.4 12	

4.6. Key Insights from the Interview on English Language Skills in the Workplace

When asked about which English language skills are most important in their jobs, most respondents prioritized reading and writing over speaking and listening. This finding aligns with Table 3, except that listening (4.112) was rated slightly higher than writing (4.048) and speaking (3.938).

On the other hand, when respondents were asked about which skills they use most frequently at work, speaking was reported as highly frequent, particularly in interactions with superiors and suppliers. Only one respondent mentioned writing as a frequently used skill. This contrasts with the findings of Kassim and Ali (2010), who observed in their study that engineers rated productive skills (speaking and writing) the highest (4.2875) compared to listening (4.2031) and reading (4.0938). However, this interview result does not align with Table 4, where reading (3.949) was rated as the most frequently used skill, while speaking was the least frequent skill at work. This discrepancy suggests that the data collected from interviews and questionnaires may not be entirely correlated.

Another key insight from the interview was that oral communication in English is frequent in the workplace, particularly for reporting work to superiors. This supports Table 5, where reporting work to superiors received the highest mean score (4.000). Additionally, some engineers mentioned that they frequently communicate with suppliers in English to discuss equipment specifications and resolve technical issues. This aligns with Table 5, where asking for product specifications from suppliers (3.540) was the most frequent sub-skill in supplier communication.

The interview findings indicate that productive skills (speaking and writing) play a significant role at work, whereas Table 3 and Table 4 highlight the dominance of receptive skills (reading and listening). Therefore, it is crucial for language instructors to design English courses that prioritize the skills and sub-skills that are most relevant and frequently used in workplace settings.

4.6. Discussion (Indian Context)

Comparing the results from **Table 3 and Table 4**, it can be observed that the **overall mean score for English language skills perceived as important by engineers is higher than the overall mean score for their perceived frequency of using those skills at work.** This suggests that just because engineers **consider a language skill important, it does not necessarily mean they use it frequently.** Similarly, a skill used frequently at work may not always be perceived as highly important. For example, **telephone communication was rated as highly important (4.100) but had a lower frequency of use (3.840).**

These findings have significant implications for **curriculum and materials development** in technical education. One of the key challenges for **language instructors** is deciding whether to focus on **skills that engineers consider important or those they use most frequently in their daily work.** If training materials focus only on **perceived importance,** they might reflect **subjective opinions** rather than real-world requirements. On the other hand, if materials are based solely on **perceived frequency,** they may not cater to all engineers, as **different job roles** require different communication skills.

To address this, **Harding (2007)** recommends the use of **authentic materials** that mirror **real-life workplace communication.** This means **language training for engineers should be based on actual job tasks rather than perceived importance or subjective opinions.** Similarly, **Tomlinson (2012)** supports using **realistic and meaningful input** so that students focus more on **understanding and practical application** rather than just memorizing language rules. Studies by **Astrid, Isabel, and Alfonso (2014)** also suggest that when students find the learning material **interesting and useful,** their motivation and knowledge retention improve. Repeated exposure to **authentic language in different contexts** can also help improve engineers' **technical vocabulary** and communication efficiency.

Additionally, **Zhang (2016)** warns against **overuse, underuse, or misuse of artificial language materials,** which can negatively impact learning. **Venkatraman and Prema (2019)** further highlight that **language instructors in engineering education** should have **specialized skills** beyond general English teaching. To bridge the gap between **college education and industry requirements,** educators must develop **innovative teaching methodologies that simulate real workplace interactions.**

Interestingly, as per **Table 5**, **reporting work to superiors** was the **only sub-skill** with a mean score above **4.000**, while other sub-skills scored below this threshold. The least frequent oral communication skills were **project communication with international colleagues and negotiating prices with suppliers/contractors**, both with a mean score of **3.080.** This suggests that **Indian engineers use English more frequently with their managers and senior professionals** (who may include **foreign or expatriate supervisors**) than with their peers.

This finding aligns with **Kassim and Ali's (2010) study**, which concluded that **engineers tend to use English more often with their superiors than with colleagues or subordinates.** It also implies that **upper management often requires engineers to communicate in English, even though speaking is not perceived as the most important skill** (as seen in **Table 3 and Table 4**).

Although **speaking skills** received the **lowest priority and frequency** compared to other skills (as seen in **Table 3 and Table 4**), the results from **Table 5** indicate that **oral communication with colleagues and superiors is still a crucial workplace requirement.**

During the **interviews with five respondents,** it was observed that they placed **greater emphasis on productive skills** (speaking and writing) than on receptive skills (reading and listening). However, many **struggled with expressing their ideas clearly in English**, especially in **meetings, project discussions, and client interactions.** Additionally, differences in **culture, language variations, and accents** made workplace communication more challenging.

This suggests a need to **address cultural challenges in spoken English**, such as **understanding different English accents, dealing with complex questions, and managing non-verbal communication (like eye contact) in face-to-face interactions**. **Siepmann (2006)** highlights that **English language proficiency is essential for self-development, cross-cultural understanding, and career advancement.** Hence, it is crucial to **incorporate cultural awareness** into workplace communication training to help engineers **overcome language barriers and communicate effectively in professional settings.**

5. Conclusion

This study examined the English language needs of engineers in India from their perspective, focusing on the importance and frequency of each language skill and the oral communication requirements across different workplace interactions.

The findings indicate that reading is perceived as the most important skill, followed by listening, writing, and speaking. Similarly, in terms of frequency, reading was the most commonly used skill, followed by listening, writing, and speaking. Engineers also considered reading to be their strongest skill, which could be attributed to occupational requirements and continuous exposure to English texts, as frequent practice tends to improve proficiency. The study also highlights key implications for curriculum development, particularly in selecting which language sub-skills to prioritize in teaching, the use of authentic industry-based materials, and the need for specialized training for language instructors.

Regarding oral communication in workplace settings, the study found that engineers most frequently communicate with their superiors (3.770), while the least frequent communication occurs with colleagues from international branches (3.265). However, engineers also need to be aware of cultural challenges in spoken English, such as variations in accents, handling complex questions, and maintaining eye contact in face-to-face interactions. Understanding these challenges can help them navigate cross-cultural communication more effectively.

Interestingly, findings from the interview sessions suggest that engineers place greater emphasis on productive skills, particularly speaking, compared to the survey data in Table 3 and Table 4, which ranked receptive skills (reading and listening) as more important. This suggests that language instructors should align their teaching priorities with actual workplace communication needs, ensuring that engineers are adequately trained in both productive and receptive language skills.

Finally, language instructors must collaborate closely with students to identify their specific language needs and develop effective teaching methodologies. By doing so, they can bridge the gap between academic training and industry expectations, ultimately enhancing the employability of engineering graduates in India.

While this study focused on English language skills and their workplace applications in Indian engineering industries, there remains a need for further research on curriculum design and module development. Future studies should explore how engineering education can be tailored to meet the evolving language demands of global industries, ensuring that Indian engineers remain competitive in the international job market.

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