English Language Needs of Engineering Students and their Syllabus: A Comparative Study of Two Universities in Maharashtra

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1. Introduction:

The recent boom in the engineering education in India has given rise to new issues and problems. According to the All India Council for Technical Education (AICTE) every year approximately four lakh and fifty thousand students get admission for engineering degree course in the country. As per the report of Multinational Companies, however, there is a mismatch between the skills students are graduating with and the skills required by the industries. Only twenty five percent engineering graduates are employable, whereas, the rest of the candidates don't have proper technical skills, English competency, communication and presentation skills and the ability to work as a part of a team.

Although engineering graduates are highly qualified academically, employers are hesitant to hire these graduates due to their poor proficiency in the language. It is a need of time to produce world class graduates to meet the demands of the changing and competitive engineering industries. Having realized the status of English as an international language and its importance as a major communication tool, educationists are taking steps to investigate ways to help and develop communication skills among engineering students. Hence, understanding the communication requirements of engineers in Multinational Companies and actual

communicative situations in which English is essential has become necessary to find out. Furthermore, it is equally essential to ensure that the English language syllabus that have been designed and implemented for engineering students at university level matches with the communicative situations and requirements of Multinational Companies.

This paper discusses the real communicative situations for engineers where effective English is essential. The purpose of this study is to identify communicative situations where English would be required by the industries. Moreover it intends to compare the syllabuses designed and implemented for engineering students in two different universities in Maharashtra namely: Mumbai University, Mumbai and Shivaji University, Kolhapur.

2 Needs Analysis:

Needs analysis has a vital role in the process of designing and carrying out any language course, whether it be English for Specific Purposes (ESP) or general English course, and its centrality has been acknowledged by several scholars and authors (Munby, 1978; Richterich and Chancerel, 1987; Hutchinson and Waters, 1987; Berwick, 1989; Brindley, 1989; Tarone and Yule, 1989; Robinson, 1991; Johns, 1991; West, 1994; Allison *et al*. 1994; Seedhouse, 1995; Jordan, 1997; Dudley-Evans and St. John, 1998; Iwai *et al*. 1999; Hamp- Lyons, 2001; Finney, 2002). Also, the importance of carrying out a needs analysis for developing EAP tests is emphasized by Fulcher (1999), McDonough (1984), and Carrol (1980, cited in Fulcher, 1999) According to Iwai *et al*. (1999), the term needs analysis generally refers to the activities that are involved in collecting information that will serve as the basis for developing a curriculum that will meet the needs of a particular group of students. Brindley (1989) and Berwick (1989) offer definitions of different types of needs and accounts of various problems and limitations in

making use of this concept, including ways in which we might usefully distinguish between needs identified by analysts and those expressed or experienced by learners. In his state-of-the-art article, West (1994) gives a thorough overview of needs analysis in language teaching, including its history, theoretical basis, approaches to needs analysis, etc.

It is essential to ensure that our engineering students are equipped with the necessary communication skills to face their challenging professional environment. While designing syllabus, syllabus designers should consult or solicit necessary information from industries as well as elicit students' needs. The syllabus needs to be more relevant to industry because this will help enhance human-capital development in the country. We can also seek recommendations from the private sector on what to include in the syllabus, so that we can equip students with the knowledge and skills that are needed.

2.1 Workplace Communication Needs:

In today's corporate world engineers are not only required to effectively convey technical information but they also need to have appropriate communication skills in order to excel in the workplace. Unfortunately, some engineers are unable to meet these challenges and requirements. Lack of communication skills is one of the most prominent reasons of failure. It has resulted in collaboration between engineering education, the industry and communication educators. Now a day, it is very much essential for communication and language educators to adapt new approaches to teach ESP. They need to know in what manner they can better equip the engineering students so that they can function well in their professional life.

This paper, therefore, describes an effort to identify and evaluate the needs of engineering students and to study whether the syllabus addresses their needs.

3. The Study:

This study utilized a self developed open-ended questionnaire to identify the importance of English for engineers, their needs and problems they face while using English. It includes interviews of in-service engineers to know the English language skills and the communicative situations in which English is essential. The need to know what is actually being practiced in companies and industries will definitely help educators, language practioners and content developers/ syllabus designers to prepare their students to face the working world.

3.1 Samples:

The participants were fifty engineering students from engineering colleges under two different universities. Twenty five students were from Mumbai University and twenty five students were from Shivaji University Kolhapur. Open-ended questionnaire consisting three statements was given to the fifty students. The students were asked to write their views on the following statements:

1. English as a global language
2. Needs of English for Engineering students
3. Problems I face while using English

Interviews are a direct way of finding out of what people think or do (Long, 2005). So, ten in-service engineers were interviewed to know actual oral and written communicative situations in which effective use of English is inevitable.

3.2 Data Analysis:

In-service engineers' interview data was analysed to find actual communicative situations in which they have to use English. The responses to questionnaire were analysed qualitatively. The

data was analysed to discover students' communicative needs, their views on English as a global language and problems they face while using language. Later on, English syllabuses of both the universities were studied comparatively. Finally the findings were interpreted and conclusions drawn.

4. Findings and Discussion:

4.1. Communicative situations:

Ten in-service engineers were interviewed for the present study. They were asked questions related to situations where English is essential. Following are some communicative situations identified after discussion with in-service engineers.

Sr. No.	Communicative Situations	Category
1	Reading written instructions/advice	READING
2	Reading abstract of projects	
3	Reading journals and publications	
4	Reading manuals	
5	Reading office documents	
6	Recording equipment and safety checklist	WRITING
7	Communicating through E-mails	
8	Writing minutes of the meetings	
9	Writing daily/periodic reports	
10	Writing abstracts of projects	
11	Writing business letters	
12	Delivering oral presentations	SPEAKING
13	Attending meetings/ occasional visits	
14	Talking about daily life situations	
15	Telephonic conversations with boss/ clients	

16	Facing interviews	
17	Public Speeches: formal/ informal	
18	Listening in international seminars	LISTENING

19	Doing post graduate study	MULTI SKILLS
20	Joining field trips abroad	
21	Training abroad	
22	Resolving conflicts	
23	Negotiating with team members	
24	Teleconferencing	
25	Working in a team	

4.2 English as a global language:

According to engineering students from Mumbai University in 21st century it's most important to step forward with the rapid change and they are aware that in this competitive world English is the only language of opportunity. They also know that dealing with foreign clients and customers English is essential. They think English is the powerful language with adequate vocabulary and now a day speaking in English has been considered prestigious. All technical books, books related to laws, commerce and medical are available in English. It is also a language of internet. Not only in engineering but in all profession English is needed and it has become language of business. All students are agreeing that English is the link language which links people from different religion, caste, culture.

Engineering students from Shivaji University have same opinions and views. According to them English is easy language and it is a window to the world.

4.3 Needs of English for engineering students:

Students from Mumbai University accept that English is globally recognized and approved language. So to work with various foreign companies and even Indian companies English communication skill is essential. For presentation (Oral and Written), writing projects, group discussions, public speaking, interviews, aptitude tests, viva, seminars, workshops English is important. Writing reports, e-mails, letters, giving details of work, reporting on various projects English is necessary. As per the views of Shivaji University students English is needed to converse with boss and clients. For writing exam papers, facing interviews, presentations, group discussion English is must.

Students from both the universities have almost same opinions about English and needs of English for engineers.

4.4 Problems I face while using English:

As per the data collected from engineering students of Mumbai University they face problems related to grammar and vocabulary. While speaking they don't get right word at right place. As some of them are from vernacular background, they face problem of understanding difficult words. They stumble, stutter when they start speaking. Most of them have lack of self confidence and stage fright. Some of them face problem of gap fillers. While writing they make mistakes in framing sentences, using tenses and prepositions.

Shivaji University students also have the same problems. Lack of confidence, stage fright, problems of using correct tenses, phrases, idioms, proper use of pronunciations these are some of them. The core problem is they don't get enough exposure from teachers and from society.

4.5 Syllabi:

4.5.1 Mumbai University:

Realizing the need to improve the communication skills of engineering students, English syllabus of Mumbai University focuses on both oral and written forms of communication. In their second semester these engineering students have 'Communication Skills' subject which includes modules like communication theory; techniques to improve communication; vocabulary, grammar and aptitude test; summarization and comprehension; basic official correspondence (Business letter writing); basic technical writing etc. 'Presentation and Communication Techniques' subject is prescribed in third semester which includes modules like business communication; advanced technical writing (report writing, technical paper writing, writing business proposals etc.); interpersonal skills; presentation skills; career skills (resume and cover letter writing, interview techniques); group discussion etc. For Communication Skills there is university paper of seventy five marks. Also, there is term work for fifty marks. These fifty marks have been segregated into two parts; term work twenty five marks and oral twenty five marks. In term work five marks are for attendance; ten marks are for assignments and ten marks are for unit test. In oral fifteen marks are for GD and ten marks are for public speech. For 'Presentation and Communication Techniques' there is no university paper; it has only term work for fifty marks. In it project report writing is for fifteen marks, GD is for ten marks, five marks are for attendance; ten marks are for assignments and ten marks are for unit test.

4.5.2 Shivaji University:

To develop communication abilities of students, Shivaji University has prescribed two subjects for engineering students: 'Professional Communication I' and 'Professional Communication II' in first and second semester respectively. 'Professional Communication I' consists modules like communication (Nature, process and barriers, form); techniques of communication (verbal and non verbal); rapid review of grammar and précis writing. Theory lectures allotted to whole syllabus are fourteen and practical hours are twenty eight for a batch of twenty students. There is no university paper for this subject but only term work is for twenty five marks. For term work teachers are informed to take formal speeches, GD, vocabulary exercise, language lab sessions on phonetics and grammar, précis writing exercises, exercises of summarizing, English articles and news, games on team building, communication and public speaking. Teachers are not given any evaluation scheme; they are told to give overall twenty five marks to all the above tasks.

'Professional Communication II' comprises techniques of professional correspondence, types of professional correspondence; report writing (importance and techniques of report writing); investigation reports (losses, strikes, declines); survey reports (examining feasibility of proposals); inspection reports of department, branches, factory etc. For this subject also fourteen lectures are allocated. One tutorial of one hour per week for twenty students' batch is allotted. Term work includes practice of report writing, technical paragraph writing, and presentation techniques. Term work is for twenty five marks and here also no evaluation scheme is given.

In discussion with few teachers from Shivaji University, it is found that students do not take this subject seriously as there is no university paper. Consequently, many colleges do not appoint

regular teachers for this subject. As a result, these prospective engineers lag behind in global competition only because of lack of sufficient English Skills.

5. Comparison:

After studying syllabus of both the universities, knowing the problems of engineering students and analysing communicative situations identified from the interviews of in-service engineers, researchers have found that in Mumbai University syllabus almost all the communicative situations have been included. In Shivaji University syllabus also many of the situations have been covered; but still some important situations have not been considered. For example, writing notice, agenda and minutes; email writing; project report writing; resolving conflicts; negotiating; etc. In Mumbai University 'Presentation and Communication Techniques subject' 'Interpersonal Skills' module is prescribed in which team building, negotiation, time management, decision making, conflict resolution, emotional intelligence, all these skills have been included which are very useful for engineers. To teach students importance of teambuilding, syllabus designers have included technical project report writing and presentation of the same with the help of PowerPoint. Such activities motivate students to learn new things interestingly. Shivaji University should also include such modules which help students to develop their overall personality. Furthermore, there should be a proper evaluation scheme to increase seriousness about the subject. Like Mumbai University, Shivaji University should also have university paper at least for one semester. Term work marks segregation should be given clearly.

6. Conclusion:

This paper tried to highlight the needs of English for engineering students, identify the communicative skills required by the industry as well as the various types of communicative situations engaged in by professional engineers in the workplace, and evaluate English syllabus of two different universities. To develop a more comprehensive engineering educational program that meets and exceeds the real needs of students and industry, feedback from both is useful. As well as, while choosing respondents for the need analysis, multinational companies and industries where English is used as the international language, should be approached instead of the national industries. This is because once students are trained in the standard requirements of multinational industries; they could survive the challenges of the national companies. Engineering education committee and syllabus designers should take into consideration the needs of students while framing syllabus. Focus of the syllabus should be on theoretical as well as practical knowledge. They should try to include all the useful communicative situations to engineers. Equal importance should be given to all language skills i.e. listening, speaking, reading, and writing.

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