

A PAPER ON THE ENGLISH FOR ENGINEERING STUDENTS COURSE BASED ON NEEDS ANALYSIS IN ENGINEERING COLLEGE

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ABSTRACT

Globalization and Industrialization has put great demands on the engineers, they require good academic skills in Listening, Speaking, Reading and Writing. All India Council for Technical Education constituted in 1945 has set criteria for engineering programs to meet the global standard for engineers. The purpose of this paper is to provide a description of the needs analysis to develop a course, English for Engineering Students. A needs analysis through survey questionnaire was done with engineers at the workplace. The data was gathered to get credibility to serve for ESP course development.

KEYWORDS: ESP, Engineering Major, Needs Analysis, Students, Teachers, Engineers at The Workplace

INTRODUCTION

English is a world class language as F.G.French has said; “because of rapid spread of industrial development, Science and Technology, international trade and commerce and the close independence of nation, English has become world language”. (Pahuja, N.P, 1995). English is a store house of knowledge. Engineers all around the world find employment in various sectors like manufacturing, communication, production and service sectors. The prospective employers look for good communication skills. For engineers whose native language is not English would find disadvantages in their professional terms. That fact would explain why the All India Council for Technical Education (AICTE) wants engineering students to acquire English communication ability to function globally in their professional fields.

PURPOSE

The purpose of this paper is to provide a description of the needs analysis to develop an ESP course for engineering students in India. To develop an ESP syllabus we need to understand the learners’ and their workplace and the ESP course is supposed to serve for the specific purpose. The engineering programs undertaking accreditation system have their articulated goal of the program and the teachers understand the requirement of English education to fulfil this goal. Engineering programs provide general English course in first year of the course. In general English courses, it is difficult to determine the students’ learning needs. But for ESP courses, as needs from learners as well as teachers, and workplace are clear, a needs analysis to develop a course is important.

NEEDS ANALYSIS

A needs analysis is to identify “what learners will be required to do with the foreign language in the target situation and how learners might best master the target language during the period of training. It is important to understand

the requirement at the workplace of engineering undergraduates.

The data of Needs Analysis for this paper was collected from the engineers employed at the workplace to get credibility of the interpretation. The numbers of total respondents were 50 engineering graduates at the workplace. The participants were employed engineering graduates working in different companies who responded to the questionnaire.

METHOD OF DATA COLLECTION

The research tool was based on Quantitative data of questionnaire survey. The tool of qualitative data was structured questions to have general understanding of their requirements. Questionnaire items were made based on syllabus, material and methodology used in the classroom for writing skill during their study in engineering.

WORKPLACE QUESTIONNAIRE

A discussion of Engineering Graduates' perceptions of the writing skills, syllabus of Bachelor of Engineering and needs at the workplace is presented. Section A has open type of questions regarding personal data like name, age, qualification, total work experience etc. Each one of them is presented in the sections below. The section analyzes, discusses and interprets the findings. Seventy questionnaires were given to the Engineering Graduates working in four companies. Based on accessibility, out of the seventy, only twenty nine completely filled in questionnaires could be used in the survey.

PERSONAL DATA

Age of the Respondent Engineers

The respondent Engineering Graduates in this study were in the age group of 22-35 years. Mostly, it is a heterogeneous group. All the respondent Engineering Graduates are from affiliated colleges of Osmania University. Out of the twenty nine respondent Engineering Graduates, seven (14%) are in the age group between 22- 25 years. Fourteen (28%) are between the age group of 25 -27 years. The Engineering Graduates who have recently passed out were more in number. They were given the questionnaire as they had studied this newly changed syllabus.

Place of Work of the Respondent Engineers

Out of the twenty nine respondent Engineering Graduates, five (10%) are from Karvy, twelve (24%) are from Accenture, six (12%) are from Infosys and six (12%) are from Muffakham Jah College of Engineering & Technology.

Designation of the Respondent Engineers

The designation of the respondent Engineers was asked as this throws light on their usage of English language skills at the workplace. Eighteen (36%) respondent Engineering Graduates are Associate Software Engineers - in this position, they need to interact with clients, present reports, write letters to clients and superiors. Five (10%) respondent Engineering Graduates are Managers and six (12%) are working as Academic Consultants in an Engineering College.

Experience of the Respondent Engineers

The questionnaire was mostly given to Engineers who have recently graduated from Engineering as they have studied the same syllabus. Fourteen (28%) have two years experience, eight (16%) respondent Engineers have 2-4 years of experience and seven (14%) respondent Engineers have 4-6 years of experience.

Mother Tongue of the Respondent Engineers

The mother tongue of the respondent Engineering Graduates was asked as the mother tongue influences the pronunciation and other skills which are required at the workplace. Seven (14%) respondent Engineers have Hindi and Telugu as mother tongue and fifteen (30%) respondent Engineers have Urdu as their mother tongue.

Information about the Respondents' Educational Background

This question has open type of question and seeks information about the medium of study of primary school, high school, intermediate and engineering.

Twenty six (52%) respondent Engineers had studied in English Medium at Primary level and three (6%) in Telugu Medium. At High School level, twenty seven respondents (54%) studied in English Medium and two (4%) respondents had studied in Telugu Medium.

At the Intermediate level, twenty nine respondents (58%) i.e., all respondents had studied in English Medium. At the Engineering level, twenty nine respondents (58%) i.e., all respondents had studied in English Medium.

How often did you get to use Writing Skills in College Days

Out of the twenty nine respondent Engineering Graduates, three (6%) used writing skills very often to interact with family members. Ten (20%) respondent Engineering Graduates never used their writing skills to write to their family members.

Out of the twenty nine respondent Engineering Graduates, ten (20%) used writing skills very often to interact with classmates. Five (10%) respondent Engineering Graduates never used writing skills in their college days to write to classmates.

Out of the twenty nine respondent Engineering Graduates, seven (14%) used their writing skills sometimes to interact with their neighbors. Fifteen (30%) respondent Engineering Graduates never used writing skills in their college days to write to neighbors.

Out of the twenty nine respondent Engineering Graduates, thirteen (26%) used their writing skills sometimes to interact with teachers, six (12%) respondent Engineering Graduates never used writing skills in college days to write to teachers.

The above results shows that very less writing skills were used by the students at their college level.

Do you have Difficulty in using English Language Skills

Out of the twenty nine respondents, eighteen (36%) respondent engineers replied that they face problems in English language skills and nine (18%) replied that they do not face any difficulty in using English language skills.

In Which Skills do you have Difficulty

Out of the twenty nine respondents, fifteen (30%) have problems with listening because they have conversations with clients who can be from different countries, taking instruction from a senior's conversation on the telephone and accent pronunciation can be different based on the project, be it American or British.

Out of twenty nine respondents, eighteen (36%) respondent Engineering Graduates have problems often with speaking, four (8%) have this difficulty sometimes. The result shows that many of them have problems while speaking. The communication is very formal and with fixed vocabulary, depending on the work and designation of the person.

Out of twenty nine respondent Engineering Graduates, fifteen (30%) have often problem with reading and fourteen (28%) % respondent Engineering Graduates do not have any problems with reading. The Engineers have to read technical data and reports. Those Graduates who come from good educational institutions do not have problems with new content.

Out of twenty nine respondent Engineering Graduates, fourteen (28%) have often problem with writing and seven (14%) respondent Engineering Graduates have problems sometimes with writing at the workplace. Writing skills involves preparing technical reports, letters to seniors and clients and they carry a certain set of expressions which are not taught at the Engineering level.

How Important are the Following Skills in English for your Job

It is a closed preferential type of question to elicit information on the importance of

Four language skills listening, speaking, reading and writing. A scale of importance is

Given very important, important and not important.

Out of the twenty nine respondent Engineering Graduates, twenty four (48%) replied that listening is very important at the workplace, twenty six (42%) respondent Engineering Graduates replied that speaking is very important at work, eighteen (36%) respondent Engineers replied that reading is very important at the workplace and twenty (50%) respondent Engineering Graduates replied that writing skills are very important at the workplace. Thus, it shows that the four skills of listening, reading, speaking and writing are very important for work.

The question is to elicit information on the use of English at the workplace; the tasks were also identified for the respondent Engineering Graduates and a scale of frequency was given very often, often sometimes and never.

Out of the twenty nine Engineering Graduates, twenty five (50%) replied they very often use English to give information to seniors. Twenty three (46%) respondent Engineering Graduates replied that they very often use the English language to share information with juniors. Twenty three (46%) respondent Engineering Graduates replied that very often they use English to report progress to seniors and only two (4%) said they never gave progress reports to their seniors.

Fifteen (30%) respondent Engineering Graduates replied that they very often use English to give presentations, twenty (40%) respondent Engineering Graduates replied that they very often use English to communicate with clients.

The result shows that English is important for all the Engineers at the workplace. It is the only medium of communication that they use. And those who do not use English say they are not confident with it.

Type of Business Writing Work you are required to do at Workplace

The respondent Engineering Graduates were asked the type of writing work required at the work place, eleven (22%) engineering graduates replied they very often use writing for Business letters. Ten (20%) respondent Engineering Graduates very often make presentations and only four (8%) never write any presentations.

Fourteen (28%) respondent Engineering Graduates very often draft notices at the workplace and five (10%) respondent Engineering Graduates never draft notices. Ten (20%) respondent Engineering Graduates very often write for project work and eight (16%) respondent Engineering Graduates often write for project work.

The result for this question shows that writing skills are very important at the workplace; most of the letters, presentations, notices and project work require writing skills.

Which of the Following Tasks do you perform through Writing on the Job and how often do you perform them

This question was to elicit response on the task the respondent Engineering graduates perform on the job for different task. There are seven categories identified where engineering graduates are required to use writing at work like Minutes of meeting, Annual report, Performance report, Explain instructions, Letters, Emails, Notice and min of meeting. The options given were very often, often sometimes and never. Twelve (24%) respondent engineering graduates replied that very often they use writing for minutes of the meeting. Thirteen (26%) respondent Engineering Graduates sometimes use writing for annual reports and five (10%) very often use writing to write annual reports. Thirteen (26%) respondent Engineering Graduates use writing to perform the task of writing performance reports. Ten (20%) respondent Engineering Graduates replied that they sometimes use writing to explain instructions.

Twenty (40%) respondent Engineering Graduates use writing for the task of letter writing. Eleven (22%) respondent Engineering Graduates use writing sometimes for the task of exchange of letters. Eleven (22%) respondent Engineering Graduates sometimes use the task of writing emails and ten (20%) respondent Engineering Graduates very often write notices and minutes of meetings.

The table shows that writing is important for preparing letters, emails and some use it to explain instructions at the job.

Do you Have Difficulty in Using English

Yes 22 44%

No 7 14%

The respondent Engineering Graduates were asked if they found any difficulty in using English. Out of the twenty nine respondent Engineering graduates, twenty two (44%) replied that they face difficulty in using English and seven (14%) replied that they don't face problem to use English language at work.

What are the Difficulties in using Written Communication

The respondent Engineering Graduates face difficulties in using English at work place as it has usage of technical vocabulary, the projects are time bound and at this stage it is difficult for anyone to guide. A list of areas of difficulty is provided to elicit information regarding difficulties in writing like Grammar, Organizing paragraphs, Connectives, Spellings, Punctuation.

Out of the twenty nine respondent Engineering Graduates, fifteen (30%) replied that very often they face difficulties in grammar. Ten (20%) respondent Engineering Graduates often find difficulty in organizing paragraphs. Ten (20%) respondent Engineering Graduates sometimes face difficulty in writing correct spelling and ten (20%) respondent

Engineering Graduates sometimes find difficulty in using punctuation.

The table shows that knowledge of grammar is important for the writing tasks and sub-tasks of writing.

Have you undergone any Soft Skills Training when you joined the Organization

Twenty seven (54%) respondent Engineering Graduates underwent training when they joined the company they were working in. They have entry level training and every company has a set of terms that they use and also the country with which the project is connected with.

What was in the In-house Training Focused on

Out of the twenty nine respondent Engineering Graduates, all replied that the entry level has soft skill trainers who design tasks in listening, speaking, reading and writing. The reading task helps to remove errors with pronunciation and accent. They have audio and video cassettes for listening and reading and worksheets for writing task. Twenty two (44%) replied that the focus of in-house training is listening and twenty six (52%) respondent Engineering Graduates replied that speaking training is given. Nineteen respondent Engineering Graduates replied that in-house training does not focus much on reading. Twenty nine (58%) respondent Engineering Graduates replied that writing is very important in in-house training.

The table concludes that writing and speaking – both productive skills – are focused more in in-house training and listening and reading are more passive skills where focus is less.

Did the Induction Programme Include a Course in English

Out of the twenty nine employed Engineering Graduates, twenty seven (56%) have attended an induction programme for a course in English and. Only two (4%) have not attended any such induction programme.

What were the Skills Aimed At

Out of the twenty nine respondents, ten (20%) replied that listening is important. Twenty (40%) respondent Engineering Graduates feel that speaking skills are very important at the workplace. Ten (20%) respondent Engineering Graduates feel that reading is not important and twenty (40%) respondent Engineering Graduates replied that writing skills are very important at the workplace.

These Questions were asked for Suggestions of the Respondent Engineers

The suggestions were importance of communication, more focus on letter writing skills, English to be taught at Third Year also, include audio/video tools and power point presentations.

In Which Year should Job Related Language Skills be taught to the Engineering students

Majority of the respondent Engineers replied this should be done as part of the Third and Fourth Years, other than the regular First Year classes.

What Skill Sets do Recruiters look for in Prospective Employees

The response to this question was all four skills of listening, reading, writing and speaking as well as presence of mind, management skills, self confidence and subject knowledge.

What Skills do Engineers need in Order to be effective at their Workplace

For this question the suggestions were: positive attitude towards work, team management skills, interpersonal skills, proper attitude towards work and confidence.

The questionnaire for the engineering graduates at the workplace was to identify the language needs and difficulties faced at the workplace.

The findings of the questionnaire reveal that

- writing skills are important at the workplace
- Engineering graduates from urban background and English medium schools are better equipped to use written English than those with rural background and other regional medium schools.
- The engineering Graduates stress the need for a specialized course that will equip them for work place needs

RESULTS

A discussion of Engineering Graduates' perceptions of the writing skills, syllabus of Bachelor of Engineering and needs at the workplace is presented. Questionnaire items were divided into two major parts, Section A has open type of questions regarding personal data like name, age, qualification, total work experience etc. Section B has information on importance of the English abilities and skills and what levels of fluency are required with them and the frequency of a work context and importance of English Language activities this section analyzes discusses and interprets the findings. Fifty questionnaires were given to the Engineering Graduates working in four companies. Based on accessibility, out of the seventy, only twenty nine completely filled in questionnaires could be used in the survey.

The questionnaire for the engineering graduates at the workplace was to identify the language needs and difficulties faced at the workplace. The questionnaire elicited information on their background, designation, use of writing skills in college, need for training in language skills and suggestions were also taken.

The findings of the questionnaire reveal that

- Writing skills are important at the workplace.
- Engineering graduates from urban background and English medium schools are better equipped to use written English than those with rural background and other regional medium schools.
- The Engineering Graduates stress the need for a specialized course that will equip them for work place needs.
- The Engineering Graduates expressed that the task at the undergraduate level should prepare them for the requirement of the workplace.

CONCLUSIONS

This paper began with an exhaustive analysis and interpretation of data of Questionnaire at the Workplace the Questionnaire was analyzed and discussed. The problems were identified for at the workplace for Engineering Graduates.

The findings of the study revealed that find some skills of writing difficult. They do not follow the steps of

writing.

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Questionnaire to Employed Engineering Graduates

Section A (Personal Data)

1. Name

2. Age between (20---22) (22-25) 22--27) (27-30) (30-35) tick the appropriate one

3. Qualification/medium of instruction at each level

General/Medium of Instruction	Professional/ Medium of Instruction	Skills /Medium of Instruction

4. Name of the Engineering college studied in

5. Address/place of college studied.....

6. Email Id.....

7. Telephone number

8. Place of work/address

9. Designation.....Department.....

10. Total numbers of working years experience.....

11. What is your mother tongue.....

12. What other languages can you speak other than your mother tongue?

13. Which language can you (write the appropriate response)

S. No	Understand Well/Not Well	Speak Well/Not Well	Write Well/Not Well	Any Other Please Specify

Section B (Language Data)

14. Information about your Educational background

Name of the Institution	Medium of Instruction
High school-	
Intermediate-	
Engineering-	
Any other specify-	

15. What was your medium of instruction for education (answer the following by putting a tick mark in the appropriate column)

	Hindi	English	Any Regional Language Specify
Primary level			
High school level			
college			

16. Information about your language skills in college

How much English did you know

	Did you Understand	Well	Not Well
Listening			
Speaking			
reading			
writing			

17. How often did you have the opportunity to use writing skills during collage days? (Answer the following by putting a tick mark in the appropriate column)

	Very Often	Often	Sometimes	Never
Family-letters				
Class mates-letters,				
Neighbors-invitation...				
Teachers.....				
Any other please specify				

18. Do you have difficulty in using English language skills (yes / no)

Language Skill	Very Often	Often	Sometimes	Never
Listening				
Speaking				
reading				
writing				

19. How important are the following skills in English for you on your job

Skills	Very Important	Important	Not Important
Listening			
Speaking			
reading			
writing			

20. Have you taken any professional training in any language? (Tick the appropriate one)

Hindi	English	Any other language.....
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21. For which of the following task do you use English

Task	Very Often	Often	Sometimes	Never
Give information to seniors				
Give information to juniors				
Give information to colleagues				
Report progress of work to seniors				
give presentation				
Negotiate with clients				
Any other please specify				

22. Information about your present writing skills.

What type of writing work you are required to do

Type of Business Work	Very Often	Often	Sometimes	Never
Business letters				
Presentations				
Notice				
Project report				
Any other please specify				

23. Which of the task you need to perform through writing on the job and how frequently do you perform them.

Task	Very Often	Often	Sometimes	Never
Minutes of meeting				
Annual report				
Performance report				
Explain instructions				
Any other please specify				

24. Do you have difficulty in using written English at the job (Yes / no)

What are the difficulties?

Area of Difficulty	Very Often	Often	Sometimes	Never
Writing grammatical structure				
Organizing paragraph				
Using connectives				
Using spellings				
Using punctuation				
Any other please specify				

25. Have you undergone any soft skills training when you joined the organization (yes /no)

What was the in house training focused on?

Skills	Yes	No
Listening		
Speaking		
Reading		
writing		

26. Did your induction programmed include a course in English (yes / no?)

If yes what were the skills aimed at?

Skills	To a Great Extent	Only Parts	Not at All	Cant Say
Listening				
Speaking				
Reading				
writing				

27. Do you think a separate course in English should be designed for Engineers (yes /no)

What should the course focus on

Focus On	Very Important	Important	Not Important	Any Other Please Specify
Listening				
Speaking				
Reading				
writing				

