

COMMUNICATIVE COMPETENCE OF TEACHING AND LEARNING IN ENGINEERING EDUCATION

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Abstract:

Communication skills have to be considered as a vital aspect in the education field. Most of the students are lacking communication skills so that they should be given special training for their future achievement in education and career. It is difficult for engineering students to learn English for Science and Technology (EST). The main reason for this paper is that the teaching of English is not focused on imparting communication skills to the students and it is treated as a content-oriented subject and not a skill-based language. The study aims at presenting the importance of teaching-learning, different strategies of language learning and reviewing a suitable approach to find out the language needs of the students to test their basic understanding. Many approaches have discussed and communicative approach is suggested for engineering education. It also discussed the basic needs of English communication in globalised development. The methodology used in EST has therefore consolidated the notion of a linguistic community within scientific disciplines and emphasized vocabulary as well as the kinds of tasks normally required in the fields. In the conclusion given some implications such as students should be motivated, provided an opportunity and encouraged to participate in the skill-based activities or tasks.

Keywords: Education, communication, skills, language, approach, activities, strategies.

India is a multilingual country and one of the languages widely in use is English. This fact determines the objective of teaching English in our country and this has been explicitly stated in NCF 2005. English should be learnt along with other languages so that we may create a pool of 'multilingual who can enrich other Indian languages, if this is the national vision as expressed in the position paper, the question we need to ask is "Can we use multilingual strategies in our english classroom?" Often scholars have expressed an opinion that learning more than one language is difficult and that such attempts are likely to cause lop-sided learning. This belief has been proved to be far from the truth in recent days. The English language is considered an official language in India and it is also one of the media of instruction in the higher education system. The constitution of India has announced English as a second language. The majority of the uneducated people also without any difficulty they can understand and reply in the English language. Even layman too understands language and answer sporadically in English but it may not fluent. So that only English considered as a Lingua France, a window of the world and also a global language.

English as a global language:

Globalization has created a smaller world for people. The spread of internet technology has network the world and our world is like a global village. English as a global language has been used by people in the world as a first language, a second language and a foreign language. English is the first language in the United States, Canada, Britain, Ireland, Australia, New Zealand, South Africa and several Caribbean countries. As a second language and official language, it is spoken by people in more than seventy countries. As a foreign language it is now taught in more than 100 countries including China, Russia, Germany, Spain, Egypt, Brazil and Indonesia. So that it has gained a stronger status in the world.

In South Asian countries English is as common language. It is currently acknowledged as a national and international language that represents the modernization and progress of individual countries. It has become the lingua franca or common language and used in many regions around the world. It is used as a means of communication in various contexts such as government, the judiciary, the medical the educational system. The business correspondence and the international trade among different countries of the world are carried out in English.

The current system of a school or higher education in India, especially in the Andhra Pradesh State, has not designed well English Language Teaching (ELT) course for the aspirants of engineering graduation. So, the students of Engineering and Technology have problems in communication skills- both oral and written. The study has focused on teaching and develop the needed English communication skills for the students, who are promising engineers and scientists. It is also aimed to identify what types of language needs are required for the engineering students to comprehend the nature of English for Science and Technology (EST).

With the massive movement of business around the world through the force of globalization, nations, as well as companies that implement a global strategy, can develop greater annual revenue than in previous times. English is seen as the carrier of new technology it is playing its role as the language most frequently used by business personnel employed in multinational business companies. Hence the English language is an important tool for both employability as well as communication.

Self-development as a teacher of English:

Self-development is an on-going process in one's life. This is true of a teacher of English as well and one should learn to develop oneself consciously. The day you enter your profession as a teacher, for the right reasons, you are nervous, not very confident of yourself and feel a sense of discomfort. These are natural to any human being. And if there are a few who do not feel this, they are happy exceptions. You cannot afford to be like this forever. You have to become a better teacher and be useful to your learners.

Hence coming to the English teachers of engineering colleges needed a particular set of language skills or competencies than those of the General English teachers. Hundred percent of the students want the Teachers English for Science and Technology to be facilitators, knowing the strategies of current classroom teaching and requiring the classroom activities and making the students active participants in the class.

Engineering Students Vs English:

As Engineering English learning students, they come to college in a quest to learn some language skills. They are:

- Students should be allowed to practice the language skills, which are useful for their daily life in the classroom and participate actively in the events like JAM, role play, debates, group discussions, seminars, etc.
- The teaching of phonetics is necessary for students to learn correct pronunciation.
- Chances for developing their language and to become a fluent speaker
- Students should be equipped with the latest technology and multi-media software for language learning.
- Acquire Technical and Functional English language skills
- Get employability and successful life

Generally, most of the Engineering College students feel very comfortable to listen but they do not good enough to use English. They are unable to speak technical discussion, asking and answering a question, expressing a degree of certainty, active listening techniques, negotiation skills, and formal meeting conversations. Many of the students do not have knowledge of basic grammar like impersonal

passives, nominal compounds, conditional structures etc. They don't have any technical English knowledge.

Engineering Teachers Vs English:

Engineering Teachers have more responsibility than ordinary language teachers. They should be facilitators and observers. Students are active participants in the class. A teacher should provide an environment to speak and share their experience in the English language. Even though their role is passive they are the real motivators and path providers in the class.

- Students should be taught necessary technical and functional terms
- They should be taught basic grammar rules and sentence formation
- Self-reading and learning of scientific vocabulary.
- A learning atmosphere should be created for the students to practice different language activities to develop their skills.
- Teaching and making the practice of English language and Para-language skills.
- Ability to use Language Laboratory and suggested activities
- Making and identifying the principles and rules of English for Science and Technology
- Taking remedial classes for duller and rural background students
- Following and applying the suitable language methods and tools
- Implementing of communicative language approach
- Preparing of course material
- Appropriate evaluation methods for both theory and practice
- Conducting mentor and mentee sessions

To achieve Communicative Competency in the Engineering colleges the faculty ought to get acquired and practiced the following competencies and skills to teach the students of Engineering and technology.

Along with the above skills the Engineering teaching faculty should train the students in listening, speaking, reading and writing skills, professional speaking and writing skills, grammar items in Scientific and Technical communication. Generally, students want the teachers of EST to be facilitators, knowing the strategies of current classroom teaching and requiring the classroom activities and making the student active participants in the class.

Teaching and Learning Strategies:

There are many language strategies are there. Particularly an English for Specific Purpose (ESP) students ore course will help to carry out the work-related communication tasks around them. Here are three strategies are mentioned, they are:

- Conversational skills
- Reading skills and
- Writing skills

The reading and writing tasks of the engineers' work requirements could come into one of the four categories: informational, visual/figure, report and procedural tasks.

The following is a summary of task and knowledge/skills under Conversation, reading and writing skills:

Conversational Tasks Vs. Knowledge:

This strategy is helpful for the student to develop their listening and speaking skills. Here are discussed some conversational tasks with knowledge-based learning. To achieve conversational tasks students should learn some dialogues or language chunks. Before they do an activity the teachers will provide course material to students. Then they will practice language and present well. Without learning the script they can't speak well.

Conversational Tasks	Knowledge/Skills
<ul style="list-style-type: none"> • Describe graphs/ statistics/ machine performance • Attend a meeting/ seminar/ conference • Give instructions • GDs and Describe causes and effects of problems • Make an oral presentation (both prepared and extempore) ex: JAM, Role play • Describe numbers with data • Field trips • Tell the time 	<ul style="list-style-type: none"> • Telephonic skills phrases • Talking about machine specifications • Discussing production errors and their solutions • Meeting etiquette • Leading factory tours for their overseas visitors • Rules of making an oral presentation and dos and don'ts • Understanding instructional manuals provided through computer video clips • Understanding oral presentations from other departments

In common, the engineering students are expected to listen to video clips of modern machines/ devices' instructional manuals, oral presentations, reports as well as attending meetings and specific training. As mentioned in the conversational and knowledge chart they are required to present work-related reports, making oral presentations and discussing their work. In the face-to-face interactions, such as discussion and negotiation in solving their professional problems, as well as taking over the phone, the engineers need good English skills of both listening and speaking to perform oral communication successfully.

Reading Tasks Vs Knowledge:

Another important strategy of Engineering education is Reading tasks. The reading activity develops the thinking ability of the students. Some of the great personalities said that "reading makes a man leader" To become a good leader you should read more. Here are mentioned some of the important reading tasks which are helpful to the student to reading inculcate the habit of reading skill.

Reading Tasks	Knowledge
<ul style="list-style-type: none"> • Instructions on how to perform job • Reading worksheets • Equipment manual • Computer-presented reading materials • Tables and Graphs reading • Information transfer • Emails for customers • Suppliers • Professionals 	<ul style="list-style-type: none"> • Engineering manuals, reports, articles, work projects and textbooks • Customer-related documents • Workplace-related documents such as • Quality problem documents • Information or instructions from computer software packages • Letters and emails from customers and within the workplace

The engineering graduated have to read new know-how, instructional manuals, messages and documents in their work. There are some frequent reading-documents involved in engineers' work routine, which involve specific knowledge/skills for reading, such as equipment manuals, technical texts and

reporting of technical notes, reading statistical data, emails, journal articles, business letters and quotation papers as outlined.

Writing Tasks Vs Knowledge:

Writing skills is very important in language learning. As complex skill comes at the end. In higher education, both speaking and writing skills occupy an important role. With writing one can put their ideas in sequential order. What they have in their mind that they can try to write and express to others. There are different tasks discussed underwriting.

Writing Tasks	Knowledge
<ul style="list-style-type: none"> • Emails to customers/ suppliers/ professionals • Resume writing and letter writing • Graphs • Tables • Equipment manuals • Job completion reports • Statistical data • Instructions how to perform job • Analysis report of problems 	<ul style="list-style-type: none"> • Describing how things work and describing a process, • Corresponding by facsimile • Responding to emails • Completing workplace and customer forms • Preparing work projects and documents regarding quality assurance for reports to customers • Preparing minutes of meetings • Emails either from customers or within the workplace

As well, the engineers communicate in written form through emails, letters, faxes and so forth. The writing tasks and their relevant skills are must-have includes in the syllabus.

Responsibilities of the EST Teachers:

The teachers that already have experience in teaching English can exploit background in language teaching. They should recognize how the teaching competencies can be modified for the teaching of English for Specific Purposes. They have to play many roles such as organizing courses, setting learning objectives, creating a helpful learning situation in the classroom and evaluating student's progress.

Teachers are considered resource persons for helping their students. So that they should identify the language learning problems and provide answers to them and teach the needed skills of LSRW to the student. They also find out the students progress in their language learning.

Communicative Approach to Teaching English:

This is one of the most recent approaches and long-lasting approaches in India. Particularly for engineering colleges to teach English is very suitable. Here is discussed some principles involved and how it practising today.

The principles involved: We call human being social animals. It is because human beings are gregarious, they live in groups in a society or a community, and they need to communicate with each other for survival. To communicate, though there are various means available, the most convenient means is the language. Communicative language teacher (CLT) believes in providing opportunities to the learners to communicate with each other.

This approach is very useful for Engineering students. Why because:

- Language learning is a natural process
- To make students as language learners teachers need tolerance

- Errors are common in learning and later it will correct
- Language learning happens best when the atmosphere is relaxed and the learner receives encouragement
- Language learning happens best when language is used with a purpose.

Teaching practices for the Communicative Approach: The communicative approach is very suitable for Engineering student. The following teacher practices apply the teachers in their classroom to make the student language learners.

1. Communication is a two-way process. So that in every class, each student has a right to speak. A teacher is not the only person to speak in class. In other words, a classroom need not always be teacher-centered. It can be learner-centered too.
2. Communication is done with a purpose. A teacher has to create opportunities to communicate in English with classmates. This can be possible by some activities: information gap, opinion gap and cognitive gap.
3. A teacher is not only a source of information. Sometimes a learner can also be a source in the classroom. The information may come democratically from all the sources.
4. A teacher is not always a giver of information. He/She can show the way to access information. Learners should strive to get the information through negotiation with materials and become self-learners through a process of discovery.
5. Learners are not passive recipients in a classroom. They should be active participants and contribute to the classroom processes.
6. Communication between one-to-many is rather unusual in the world outside. In the world outside we communicate in small groups of three to four people. Such communication is more effective. The classroom should reflect this type of communication because it prepares the learners for life in the real world. With this, the learners learn to cooperate and learn from each other. Therefore should use pair and group work in the classes.
7. In the real world, questions are asked by a person who knows less, and the answers are given by someone who knows more. In the classroom, it will happen. A good classroom always should provide as many opportunities to the learners as possible to ask questions. Learners should be encouraged to frame the question and also ask them.
8. Communication in the world outside does not always use well constructed full-formed sentences, with the correct pronunciation. There are lapses, and the speakers are not corrected. A classroom where a learner attempts to use language and makes errors need not be corrected immediately or always. A teacher should be developing tolerance to errors. In other words, our focus should shift from accuracy to fluent and appropriate speaker.
9. Using a mother tongue is not a hindrance but can be used as a resource in the second language classroom when there is a need.

Additionally, it is difficult to describe in exact terms those techniques which are used by a teacher in the class. The classroom is more interactive by allowing the learners to work on tasks. Tasks that are 'problem-solving' in nature, allow the learners to think, interact with others and arrives at a solution. This helps in creating a purpose to communicate and use language fruitfully for engineering students.

First of all, to implement the above tasks, teachers should design the syllabus of having different approaches which help to develop in the English curriculum for Science and Technology (EST) programmes. The syllabus should have included many approaches: constructive approach, collaborative approach and elective approach, Remedial, Reciprocal and Reflective approaches in teaching English. Then only they can achieve learning English and acquiring communication skills.

According to many eminent persons language is not an end in itself, but a means of conveying information and feelings about something. The next important aspect is the course outline. It has to be including a programme framework and an EST course syllabus. Therefore it is assumed that the EST course should be intended for the student to learn English given acquiring a good knowledge of science and technology as well as interacting with scientific and technological texts.

The materials should have from real-life situations. Teaching materials have to encourage students to be active in the classroom. Lots of practice in the classroom could develop the skills needed for communication in English in an occupational situation in the classroom and language laboratory.

- Equipment in the English Language class and Lab
- The equipment contains the latest technology
- The Computer-aided multimedia systems
- T.V., projector, a digital stereo-audio and video system
- LCD projector/ overhead projector

The theories of language or the nature of language will have three main dimensions. They are structural, functional and interactional views. Teaching methods such as Grammar Translation, Oral Approach (Direct Method), Situational Approach and Audio-lingual Approach were derived from the belief in “language as a system of structurally related elements.

To learn a language, not only grammatical rules are needed. But the learners also need to understand words and be able to use both in real communication. On the other hand, the teaching methods such as Content-based instruction, Task-based language teaching and Competency-based instructions, are characterized as interactive language. Communicative competence and the ability are considered to use the language correctly and appropriately to attain good communication goals. This well-known model encompasses four types of language competence:

1. **Linguistic:** Grammatical competence or accuracy
2. **Sociolinguistic:** The extent to which utterances can be appropriately used or understood
3. **Discourse:** Ability to combine ideas to achieve cohesion and coherence
4. **Strategic:** Ability to use strategies to handle language knowledge limitations.

English for a specific purpose has generally been treated as the most significant development in the field of English language teaching. Language is a means of communication that involves an integration of the four skills namely Listening, Speaking, Reading and Writing. The communicative approach plays a vital role in enhancing the learners' communication Skills. Generally, teaching materials should be provided by a language teacher or institution to fit the specific subject areas of particular learners according to speaking needs for academic purposes. The study has suggested very needful and useful information to the engineering institutions. The paper also intended to improve the competencies and skills of the English teachers so that the students of engineering and technology get benefited in accomplishing their language needs.

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