ESP Curriculum for the Engineering Programme: An Analysis

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ABSTRACT

The aim of English teachers at the degree level in engineering colleges is to produce students with adequate communication skills in English so that they can become trained communicators in both written and spoken forms as well as can excel in their tertiary education and cope up with the real-world challenges. This paper is based on the findings of a survey of the teaching and learning of English by gathering information from students, English teachers, and technical & non-technical staff members of a technical university in Mathura, Uttar Pradesh. Based on the findings of the study, the paper argues for a modern educational structure for improved communication skills for engineering students and proposes switching from an intense conventional teacher-centric approach to a learner-centric proportional learning approach.

Keywords: *ESP Curriculum, Communication Skills, Learner-Centric Approach, Teacher-Centric Approach, Engineering Students*

The Background

Although English language communication skills are deemed an essential commodity for engineering students, it is secondary to the teaching of technical subjects in institutions offering technical education. Improved communication in English is expected not only by teachers and students but also by other teaching and non-teaching employees, and largely by recruiters. English communication has been shown to trigger students' anxiety at all levels. On the other hand, some mitigating factors include academic demands, unfamiliarity with communicators, lack of exposure to English and varying degrees of English competence. However, little has been done by the various stakeholders of the Maharashtra engineering curriculum to mitigate this problem, but the issue continued to remain the same.

The paper offers a groundbreaking approach to design a programme focused on the study of multiple facets of language learning. Such a programme will provide engineering students with the skills required to study technological topics, and they will become adequately trained and prepared to fulfil the professional demands.

Research Method

Meganathan (2009) observes: "Language education needs to be looked at holistically in terms of basic assumptions about language learning/acquisition (how learning takes place), learners' profiles and the contexts in which learning takes place and the recent developments in language learning-teaching."

The present paper gives an overview of the present curricula as well as the circumstances, relationships, perceptions and processes concerning English teaching at GLA University,Mathura, Uttar Pradesh (hereinafter referred to as GLAU).

An assessment of the students' requirements or need analysis of the English language and an examination of to what extent the current engineering English programme meets the expectations are carried out using questionnaires, focus group meetings, interviews and experiences. The data related to the language requirements and the shortcomings were collected from 60 students, 10 English teachers and some technical subject teachers, and 6 training and placement officers of GLAU.
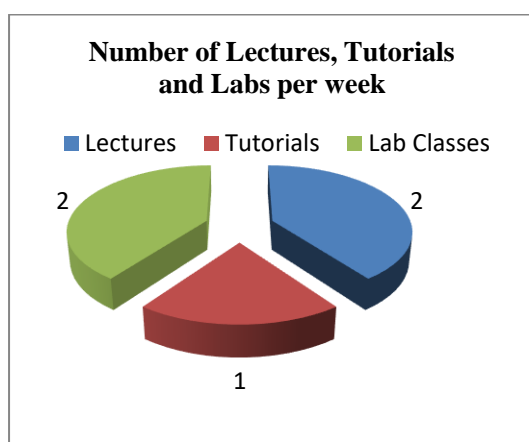
Different factors such as goals, content, resources, teaching method, evaluation and the overall English learning conditions were discussed. Both – quantitative and qualitative – approaches are applied to carry out this research. Quantitative approach is used in collection of data with the help of questionnaire whereas qualitative approach helped the researcher in analysing his experience while conducting this research.
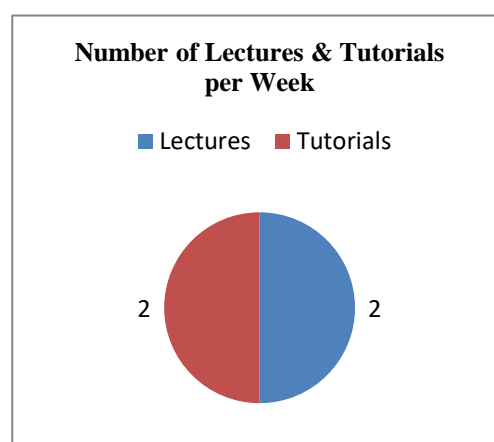
Types & Number of Participants

■ Number of participants
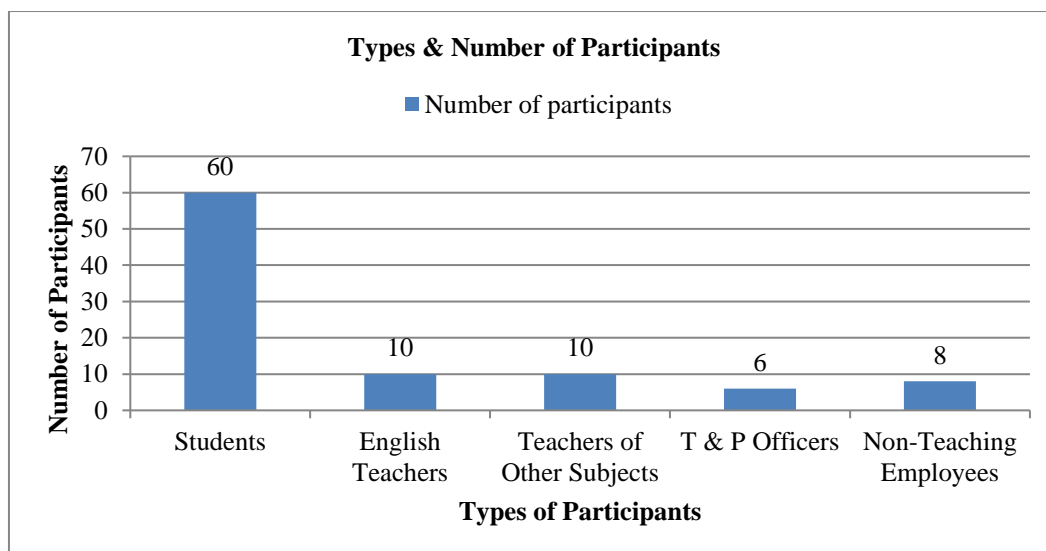
English for the Engineering Students of GLAU

The courses recommended for GLAU engineering students are ranging from a general course in English communication to the English for Specific Purposes. The prescribed content can be defined as eclectic as the curriculum consisted of a variety of grammatical and speech materials other than a few topics from literary texts. The students are offered lectures, tutorials and practice in language lab. After looking back to the present situation, it can be said that the orientation kept changing from time to time, overlooking the needs of the learners. Sometimes communicative approach alone, sometimes prominence to grammar and literary texts, and some other time, some other different approaches to teaching somehow kept all the stakeholders in standstill. The needs of the students, i.e., what they need to be offered and how, were almost neglected while delivering the contents.
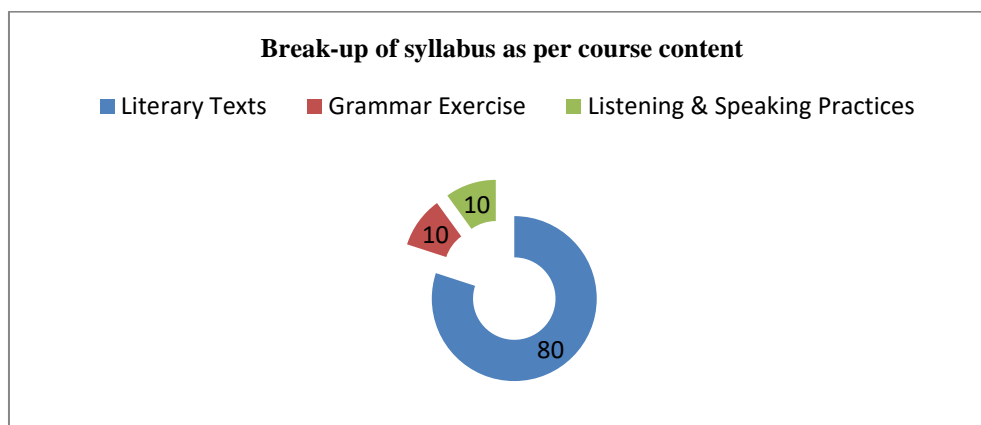
English classes in B Tech I Year   *English classes in B Tech II Year*

Number of Lectures, Tutorials and Labs per week

■ Lectures ■ Tutorials ■ Lab Classes

Number of Lectures & Tutorials per Week

■ Lectures ■ Tutorials

Listening and speaking are the most overlooked skills with students 'usually' just 10% of the time. Although listening is treated as the second most advanced ability, there is no preparation for this skill. A few texts are prescribed and it is assumed that it will help them improve their reading and writing

skills and vocabulary. It is also assumed that reading aloud will help them improve their pronunciation, and ultimately, their overall communication skills.

Break-up of syllabus as per course content

■ Literary Texts   ■ Grammar Exercise   ■ Listening & Speaking Practices

10

10

80

Finding the Right Groundbreaking

In the situation of teaching English to engineering students, maintaining a balance between teaching and learning is not just the consequence but also the process: the students are overwhelmed with vocabulary knowledge with a total neglect of the context. Consequently, attention to multiple stages of the instructional and learning phase is important. The Engineering English curriculum review and the language learning system make it apparent that the proper proportion of the following in a series must be included:

a) A balance between Form and Function

While teachers tend to emphasise the communicative nature of language rather than memorising language rules and habits, considering that it may not have required effects, students favour rote learning due to different variables such as content, time restrictions, test habits and consequent appraisal lead to the usage of rote learning.

b) A balance between Process and Outcome

Students don't realise the relevance of what topics are prescribed to them and why, and also, how they are delivered. The English teachers teach the students using an outcome-oriented method and concern themselves only with the right thing. The students are least interested in the method of teaching. This indicates that the English courses in engineering institutions, in this respect, are not unlike the other courses such as English for Specific Learners offered at the tertiary level.

c) A balance between Traditional Approach and Communicative Approach

The state of English teaching and learning at GLAU can best be described as:
- English is largely taught for professional purposes, i.e., with a purpose of getting the students placed.
- Insufficient time is available for English language practice activities.
- English teachers need to design more appropriate lessons owing to the shortage of available resources.

The most popular type, though, is the lecture method along with the traditional methods of grammar-translation. Lesser time is allocated for drills or activities in English that will help students communicate in English. Even the communication skills are taught instead of used for information. The traditional language classes are teacher-centred. In reality, the interests of students are utterly disregarded and least known.

In comparison to conventional teaching methods, the Communicative method assumes that developing communication skills is the purpose of language teaching. It underlines the value of providing students the ability to use their English to interact. Task oriented instruction utilises activities as a tool to incorporate many technology-integrated language learning methods, but in the English classroom of engineering students, a complete task-based teaching is not effective because:

- While the students are motivated to undertake an assignment, the communicative goal is somehow lost since the number of eligible English users is very less. And people with a certain amount of language competence don't use everything they know. Students consider it a priority to complete the task and not to use the language.
- The teachers' supervision over the teaching-learning process is, to some extent, important to improve the language learning progress of the students. There will be little improvement if students just have their own language tools.
- It is found that the students did not understand what to have at a certain stage, which is why they were unable to use English. The method of equipping students with terms and phrases appropriate for assignments must be discussed.

Such a scenario does not support communicative activities since a certain degree of previous knowledge is necessary.

Nevertheless, the usage of language learning assignments is completely important in order to meet the desires of learners, instructors and employers equally, i.e., to properly interact in English. Although 'tasks' may prevent the domination of teachers and students get to interact naturally (Willis 1996, 18), the presence of teachers is necessary for two reasons. First, to include "modern languages" where possible, and secondly to avoid improper usage, thus prohibiting students from requiring 'to invent non-target like language in order to communicate' (Swan 2005, 390). The course requires, therefore, being more student-oriented, taking the interests of the students into consideration.

d) A balance between appropriate utilisation of Formal and Informal Learning Opportunities
Even if the medium of instruction in most of the technical institutions is English, in casual discussions and conditions, English is almost negligible. Considering the time limits and the degree of competence to be attained by the completion of the course, the students should ideally have some ability to use vocabulary. The lack of adequate training in oral communication is a significant gap in the current teaching and learning situation in the English language classrooms. Not only grammatical structures, but also communication skills cannot be completely learnt unless the students learn to fulfil the demands of interactions since the students are never forced to utilise their linguistic skills, their mastery of language and conversation stays inactive.

e) Understanding the distinction in General English and English for Specific Purposes (ESP)
The curriculum at GLAU includes the use for unique purposes of ESP or English for Science and Technology. The textbooks in English do not address the subjects or situations that the students may face in their potential working setting. The selection of anthology of literary pieces has little or no connection with the students' professional problems. A few literary texts are there but these are with a purpose to give the learners opportunities to practice reading, writing and pronunciation. Mainly, the book on technical communication is targeted at engineering students.

The curriculum emphasises the language skills that engineering students require most – oral speech skills. New resources are required to help students use English for academic purposes. It is found that the students are not conscious of the need to assimilate practice techniques before or when they are studying their engineering subjects.

f) Suitable Assessment Pattern: Summative Assessments Vs Continuous Assessments

The GLAU English programme recommends an internal evaluation by their English teachers in form of class tests and assignments, and external evaluation through university examinations of students during the whole academic year. The students are tested mainly on the basis of assignments, unit tests, term exams and class attendance.

Another remarkable fact is that even when the oral proficiency is the need of the students, the test is carried out in textual form only, i.e. sample evaluations, tasks and phrase analyses. There is very less attempt made to assess oral abilities.

g) Texts for Reading

The revised GLAU English curriculum for engineering programme includes text on technical skills or processes such as, grammar topics to maintain accuracy in speech and writing, e-mail writing. presentation skills, drafting proposals, writing reports, mock interviews, etc. The literary texts or science fiction is also included but on experimental basis to see if it generates their interest in language learning and can be helpful for them to develop the basic language learning skills.

h) Proportionate amount of Theory and Practice

Instead of prescribing prose texts, topics emphasising the language use are taught and examined because it is claimed that university exams tested the students ' ability to perform at workplace. While doing so, the tests try to measure the students ' actual abilities to use English on their own, which ensures that language usage is emphasised. Activities are listed in the curriculum. It is considered to be appropriate to establish a programme where activities are an essential part of language learning.

Rationale for the use of a Groundbreaking (Proportional) Approach

The change from the conventional model, which emphasises teacher-centric activities, to a proportional method would mean that the programme is increasingly more student-centric and language-oriented and the teachers' role is merely that of facilitators. But actually, the older approaches are not fully ignored and modern methods/techniques are not absolutely embraced. Furthermore, since no teaching –learning approach can be considered the best approach, it is would be most appropriate to use aspects of different approaches in moderation according to the need of the learners (Swan 2005).

The approach can be recommended on the basis of the following possibilities:

1. Catering to the varied needs of learners

An ESP course is guided by learners' individual needs. The requirements of the learner differ in a mixed skill class. In general, most undergraduate engineering courses include mixed abilities students. The GLAU Language curriculum for engineering students is a blend of diverse modes of studying and English skills. Drastic improvements to the nature of an ESP course will be inefficient and impractical, rendering it impossible for the different members in the programme to recognise or even enforce. The incremental implementation of ESP is ideally adapted to the transitional stage from conventional teaching to ESP.

2. A better option for students of different proficiency levels

There is a need for discussion on different standards of competence in language skills. Since promoting students on the basis of their language skills isn't an alternative, the only solution appears to be is that separate courses with various levels of language skills should be offered for the learners.

In addition, the flexibility for students to select a course that fits their degree of experience is a learner-centred solution to this issue. Choice Based Credit System (CBCS) is a boon to such learners.
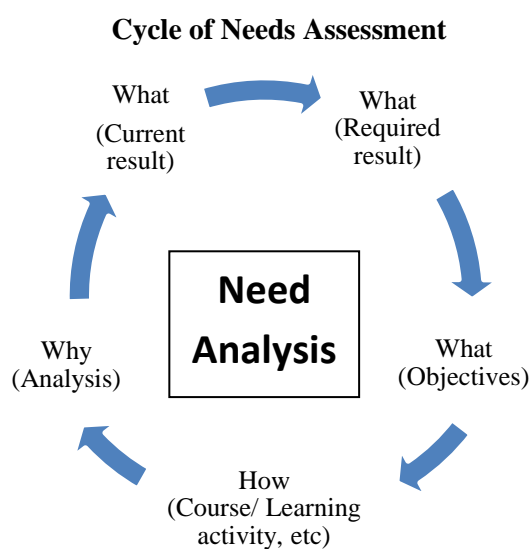
3. Gradual learner-responsibility in the learning process

Any adult students will have very clear opinions about how language should be taught. Students who are heavily influenced by teachers, as in most Indian schools and colleges, find a student-centred, casual learning experience to be a waste of time. Such a mindset will discourage them from gaining from these learning opportunities. A consensus situation may be established in a proportional way with the characteristics of conventional rule-learning grammar and task-based language training for students. The newly designed course at GLAU is extended over two years, and grants students more accountability and less interference of teachers over their learning.

4. Gradual shift to more learner-centeredness

The current English curriculum for engineering students at GLAU is specifically procedural, as it incorporates a concept building followed by practices. Breen (1987, 82) sees the creation of a course as an interpretation of a specific framework. The design of a course in the suggested proportional method is the result of the paradigm shift phase. It discusses the desires, challenges and possibilities of an environment in which teaching has improved but has not improved entirely. Without an intrusive intermediate step, it is challenging or sometimes unlikely to introduce a syllabus focused on a modern model.

In the low mode of learning, as stated by Nunan (1999), students are progressively and systematically made aware of the processes behind their own learning. For a period of time, they are largely liable for their own learning. This method of learner concentrating will be more appropriate for implementing improvements in an intense teacher-centred classroom. In turn, this will allow all stakeholders flexibility to transition and finally, to appreciate the new framework.

Cycle of Needs Assessment

What
(Current result)

What
(Required result)

Need Analysis

Why
(Analysis)

What
(Objectives)

How
(Course/ Learning activity, etc)

(Source: Watkins, Ryan. 2007)

Course Contents and Sequencing

Any language course starts with the content. The module contents may be sequenced in three steps – grammar, vocabulary and pronunciation. Five similar characteristics that will go across these three stages include consistency, the use of language macro-techniques, the application of analytical reasoning skills and the usage of natural language contact. The five lines are scattered over three

stages with fewer concentration on precision and macro-competence in order to improve the usage of analytical reasoning abilities, comprehensive learning assignments and specific language exercises as students advance from a lower to a higher stage. This means that students move from closed assignments to more open completed tasks, from practices directed by teachers to student events, from direct language usage to independent use of context-based languages forms.

The new course suggests using a differential method to assess the equilibrium of the five strands on each step. The uniform curriculum, as students transfer from level 1, to level 3, will decrease in proportion and value, i.e., from basic to intermediate. Trust in conventional approaches / formal curricula may only contribute to circumstances where language is learned and studied, but not naturally generated (Swan 2005, 396). The conventional method relies on ability and success. Since both methods are needed to improve the communicative language skill of students, they must be utilised proportionally. Teachers and students should focus on the success or lack of learning outcomes during each task and review them. If the goals are not met, they should negotiate together on another possible operation.

Conclusion

In a brief amount of time, communication abilities cannot be established. They will potentially be brought in various environments for a prolonged period of time. Repeated experience is like any other skill of speech. The solution resides in switching from a conventional approach to language learning to a more communicative one. A hop from one end to the other does not have any reason at the same time. Under these conditions, a transitional stage is unavoidable in English teaching. During this process, a proportional approach is becoming more relevant. It is a way to prevent problems and not dwell on some part of language learning. Using a balanced strategy involves having the correct proportion of multiple methods, techniques, approaches, and activities to optimise learning and better suit the needs of students across time. This involves supporting each other such that in new conditions the entire method is the best for students.

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