CHAPTER 2

REVIEW OF LITERATURE

The focus is given to review of literature in the context of theoretical and practical aspects of only making syllabi for teaching English language to students of technical courses. The outstanding and useful work of other researchers relevant to our objective has been reviewed here.

Communication Skills is a branch of English teaching for students of engineering which comes under English for Specific purpose (ESP). English for specific purposes emerged immediately after the Second World War, due to the applications and expansion of Science and Technology were brought to limelight. Accordingly the number of engineering colleges started emerging all over world including India. In this chapter the needs analysis, communicative and linguistic needs of engineering students and professional engineers and theories of syllabus design are reviewed.

2.1. Materials Evaluation related to ESP

2.1.1. As a key area in English language teaching ELT, in engineering and technology the significance of material design and evaluation has a lot of importance. As a matter of fact the vast choice of the materials available and the specific needs and demands of the learners it is necessary to select material focusing on the communication needs and demands of the learners. It is necessary to select the material focusing on the needs of the learners. Due to globalization, the demand is for Computer Assisted Language Learning (CALL) and materials with high standards and presentation. As we are here focusing on the needs of Engineering and Technology related material, it is important for us to focus
also on General English and ESP, as these share the same principles of language
teaching, having effective and efficient learning as a main objective. ESP learners are the
ones who need English for their specific area and are aware for their needs. Strevens
(1988 cited in Gatehouse 2001) defines the characteristics of ESP as they are:

- Designed to meet the needs of the learners,
- Related in content to particular disciplines and occupations and activities,
- Centered on the language appropriate to those activities in syntax, lexis,
  discourse, semantics and analysis of the discourse and
- In contrast with general English

Therefore the selection process can be greatly facilitated by the use of systematic materials
evaluation procedures which help ensure that the materials are consistent and change according
to the needs and interests of the learners. They need to be in harmony with the institutional
ideologies on the nature of language and learning. (Nunan, D., 1991 Language teaching
methodology. Prentice Hall).

Basically Communication Skills practitioners need to screen the material in order to predict their
suitability for particular group of students. Thus we should use material evaluation to question
and develop our own ideas. Another benefit is through identifying strengths and weaknesses in
textbooks, reference books, and optimum use can be made of strong points and weaker points
and thus it can be adapted or substituted from other books, (Cunningsworth, 1995).

2.2. Difference between General English and ESP

General English (GE) and English for Specific Purposes (ESP) share the same principles of
language teaching, having effective and efficient learning as a main objective. The main
difference between ESP and GE lies in the needs of the students. ESP learners are those who
need English for specific purpose like engineering students, they also know what the ESP course should offer them.

Dudley-Evans and St. John (1998 as cited in Gatehouse2001) modified Strevens’ definition and offered a definition of the variable characteristics of ESP.

ESP may be related to or designed for specific disciplines; ESP may use in specific situations, a different methodology from that of general English; ESP is likely to be designed for adult learners, either at the tertiary level institution or in a professional work situation. It could, however be for learners at secondary level; ESP is generally designed for intermediate or advanced students;

Hutchinson and Waters (1987) have broadly defined ESP as “an approach to language teaching in which all decisions as to content and method are based on learner’s reason for learning”.

Anthony (1997) notes that, it is not clear where ESP courses end and general English courses begin; numerous non-specialist ESL instructors use an ESP approach in that their syllabi are based on analysis of learner needs and their personal specialist knowledge of using English for real communication.

2.3. Needs Analysis

The selecting, ordering, presentation and assessment of material in a language course should be based on a careful consideration of the learners and their needs, the teaching needs, teaching conditions and the time and resources available.

The term needs analysis also known as needs assessment, generally referring to the activities that are involved in collecting information which will serve as the basis for developing a curriculum that will meet the needs of a particular group of students.

Communication Skills course designed in consultation with professional engineers, ESP
practitioners, Engineers on Board of Studies and students are likely to be more effective than the one designed without consultation of the stakeholders. These courses need revision as the courses are not effective seeing the present needs, analysis and globalization. Many communication skills courses or English for Engineers, or Technical English courses have been found ineffective because the present and future target needs are not analyzed. This happens as the courses are designed according to the experience and intuition of the individual. Therefore it is essential to analyze the learners’ present and future communication needs and design the course based on needs assessment.

Richards (1984) suggests analysis of learners’ needs rather than a linguistic analysis as a starting point for a language teaching course design as it also allows more involvement on the part of the target population in curriculum development. This enables identification of goals and objectives and a provision of data for evaluation and accountability. The model developed by Nunan (1985) is similar to the one devised by Richards. The only difference here is that curriculum development activities occur during the process teaching and learning.

The following sections gives a review of literature on English for Specific Purpose (ESP) and needs analysis and interprets the data collected from various sources to assess the students’ present and target needs.

**2.3.1. Target Situation Analysis:** In 1970’s needs analysis was mainly concerned with linguistic and register analysis, and as Dudley-Evans and St. John (1988) say needs were seen as discrete language items of grammar and vocabulary. With the publication of Munby’s(1978) communicative syllabus design needs analysis moved towards placing the learner’s purposes in the central position within the framework of needs analysis.
Consequently the notion of target needs became paramount. Munby’s overall model clearly establishes the place of needs analysis as central to ESP, indeed the necessary starting point in materials or course design.

Munby’s overall model is made up of seven elements:

i. Participants: it is about collecting information about the identity and language of the learners: age, sex, nationality, present command of target language, other languages known and extent of command;

ii. Communication Needs Processor (CNP): this investigates the particular communication needs according to socio cultural and stylistic variables which interact to determine a profile of such needs;

iii. Profile of Needs: profile of needs is established through the processing of data on CNP;

iv. Meaning Processor: In the meaning processor “parts of the sociocultural determined profile of communication needs are converted into semantic subcategories of a predominantly pragmatic kind, and marked with attitudinal tone” (Munby, 1978: 42);

v. Language Skills Selector: The language skills selector identifies “the specific language skills that are required to realize the events or activities that have been identified in the CNP”;

vi. The Linguistic Encoder: It considers “the dimension of contextual appropriateness”, one the encoding stage has been reached;

vii. The Communicative Competence Specification: The communicative competence specification indicates the target communicative competence of the participant and is the translated profile of needs.
The aim of Munby’s CNP is to find in detail the linguistic form a prospective ESP learner is likely to use in various situations in his target working environment. As Hutchinson and Waters (1978) say, the outcome of the processing data by means of Munby’s model is what the learner needs to know in order to function effectively in the target situation.

2.3.2. **Present Situation Analysis (PSA):**

Present situation analysis may be taken as a complement to target situation analysis. If target situation analysis tries to establish what the learners are expected to be like at the end of the language course, present situation analysis attempts to justify what they are like at the beginning of it. Truly, a PSA estimates the strengths and weaknesses in language skills, learning experiences. If the starting point to which the students need to get is to be established, first the starting point has to be defined, and this is provided by means of PSA.

In the PSA approach the source of information are the students themselves, the teaching establishment and the place of work. The PSA can be carried out by means of established placement tests. The background information of the learners can provide us with enough information about their present abilities which can thus be predicted to some extent.

2.3.3. **Needs Analysis as a Combination of TSA and PSA:**

Needs analysis may be seen as a combination of TSA and PSA. Within the realm of ESP one cannot rely either on TSA or PSA as a reliable indicator of what is needed to enhance learning and reaching the desired goals.
A modern and comprehensive concept of needs analysis is proposed by Dudley-Evans and St. John (1998:125) which encompasses many approaches. Their current concept of needs analysis includes the following:

- Environmental Situation: information about the situation in which the course will be run (means analysis)
- Personal information about learners: factors which may affect the way they learn (wants, means, subjective needs)
- Language information about learners: what their current skills and language use are (PSA)
- Learner’s lack the gap between the present situation and professional information about the learners
- Learners needs from the course, short term and long term needs
- Language learning needs
- Professional needs of learners, the tasks and activities English learners will be using language skills for
- How to communicate in the target situation, knowledge of how language and skills are used in the target situation.

The review of literature on needs analysis shows that it is vital to gather relevant information about the learner from the learner and get their views on what they should be taught and how they should be taught; therefore it is correct in saying that the whole needs analysis process should be learner-centered.
2.4. Review of Communicative needs of Engineers

Over the past decade the importance of communication skills for engineering students has been emphasized by engineering departments in developed countries and organizations such as IEEE host special events to equip students with basic professional skills. Ever since English for specific purposes has become an important branch of English Language Teaching, researches in the field of English for Science and Technology have been carried out by academicians in different parts of the world. This study looks at some research works conducted in the field in different parts of the world and analyses how they can be used in the Indian context.

Ever since English for Specific/Special Purpose (ESP) became an important branch of English Language Teaching (ELT), researches in the field of English for Science and Technology (EST) have been carried out by academicians in different parts of the world. The study looks at some research works conducted in the field in different parts of the world and analyses how they can be used in the Indian context.

Highlighting the importance of non-technical skills for engineers, Joseph Lillie, area manager at BellSouth in Lafayette, Louisiana, says that engineers “have to stay polished these days, because they can become obsolete, not because they lose their technical skills, but because their company does something that eliminates their job, a merger or something”. The key non-technical skills he prefers to see people polish are public speaking, written communications and ethics. (Costlow, 2000)

Winsor, Curtis, and Stephens (1997) surveyed 1,000 human resource managers to determine the most valued contemporary job-entry skills. Their findings included communication skills,
specifically listening, public speaking, interpersonal communication, written communication, and the trait of enthusiasm.

Engineers are expected to be good problem solvers. David et al (2006) state that one solution for preparing engineering graduates to become better workplace problem solvers is converting their curricula to problem-based learning (PBL). PBL programs replace traditional courses with integrated, interdisciplinary sets of complex problems that students learn to solve collaboratively.

In this rapidly changing globalized world, engineers do not belong to any particular nation. They should have the skills of globalized engineers. Globalized engineers are those who possess multi-skills including communication, critical thinking, and ability to work in group and interpersonal skills.

In the Executive Summary of the report in search of Global Engineering Excellence, globalization is defined implicitly through the following introductory statement:

“The world is rapidly transitioning from one of nationally differentiated organizations and cultural identities to one increasingly characterized by transnational institutions and multicultural community. Accelerated by dramatic technological advancements, this transformation is having a profound effect on national and international systems of commerce, education and governance. This new world will require an even more sophisticated workforce to address a growing list of complex and interdependent global challenges, such as sustainability, security, and economic development. Engineers, whether working abroad or at home, play a critical role in addressing these and other global challenges.”

Globalization has an effect on engineering education. The Global Engineering Excellence report gives insights into the effects of globalization on institutions and students. The Global
Engineering Excellence Initiative began in October 2005, resulted in defining global competence of engineers. The short version of the report lists the following as the qualities of a global engineer:

- Technical adept
- Broadly knowledgeable
- Innovative and entrepreneurial
- Commercially savvy
- Multilingual
- Culturally aware
- Knowledgeable about world markets
- Professionally flexible and mobile

According to David et al (2006), most engineers felt well prepared for core engineering jobs. However, there was general acceptance among most engineers that graduates will “really” learn how to be an engineer during the first year or two on the job. “Really did practicing engineers recommend more engineering in the engineering curricula? Rather, most of the engineers emphasized more instruction on client interaction, collaboration, making oral presentations, and writing, as well as the ability to deal with ambiguity and complexity.”

Globally engineers recommend more communication skills in the engineering curricula to prepare for the workplace. For example, Aviv (2007) in her article ‘Don’t be shy’ states “Because speaking well is often crucial to getting a job – and to sounding educated – nearly half of American colleges and universities require a public speaking or communications course, according to the National Communication Association.”
2.5. Review of Theories of Syllabus Design

There have been a growing number of individuals who require English for occupational and vocational purposes, as well as for general educational purposes. This has led to a corresponding increase in attention on syllabus design.

2.5.1. Distinction Between Curriculum and Syllabus

As needs of the learners began to get importance, a learner-centered curriculum started gaining prominence. One of the important forces helping learner-centered teaching was the advent of Communicative Language Teaching (CLT). CLT was presented to the world in Threshold Level English, and Notional Syllabus by Wilkins (1976) Van Ek and Alexander (1980). The Council of Europe wanted to specify the notions and functions that language users might wish to give expression to in the languages used within European Community. Consequently, they thought of a specific group of adult learners using the languages of Europe to carry out specific tasks which included not only economic and business activities but also recreational and tourist activities (Nunan 1988).

When language teaching started evolving, linguists and social workers began to explore the concept of the speech situation. In doing so, they were able to articulate some of the ways in which language is likely to be influenced by situational variables. Among the more important of these variables is the situation itself, the topic of conversation, the conversational purpose, and probably the most important of all the relationship between interlocutors in an interaction (Nunan 1988).

The functional-notional approach led to a major development in ELT with a sharp focus on specific purposes. The teaching of language to cater to the particular needs of students...
is not a recent phenomenon. H.E Palmer (cited in Widdowson 1983:14) made a crucial point about it when he stated that “We cannot design language courses until we know something about the students for whom course is intended, for a program of study depends on the aim or aims of students”. The needs of the students became the aim of teaching in ESP. The notion of ESP is an important aspect of communicative approach. It also includes EAP, EOP, and EST. ESP is the pedagogic generalization and the socio-linguistic notion of speech repertoires (Hymes 1972). It is, therefore, maintained that an effective language syllabus is one that is directly related to the specific and limited academic and non-academic functions to which the learner might put the language in question to use (MacKay and Mountford 1978, Munby 1977 and others).

Mountford and MacKay (1978) in fact suggest three kinds of purposes for ESP. They are occupational, vocational, and academic.

Strevens P. (1977) suggests two broad categories. He says that, all, Special Purposes Language Teaching Courses (SPLT) are either occupational or educational in nature. Trimble (1985), however, feels that there is a great deal of overlap between EAP and EOP, maybe because communicative skills are common to both the purposes.

Hutchinson and Waters (1987: 17) showed ELT as a tree with ever-growing branches of EAP, and EOP which can be further divided with EGOP, and ESOP. EAP can be subdivided into EGAP and ESAP:
Figure 1.1: ELT and its Division

The basic language skills are common to all kinds of jobs but the use of English for Special Occupational Purposes may vary. Considering the fact that study skills required for different groups would be different, English for Science and Technology emerged as a major division of the ESP (MacKay and Mountford 1978). According to Robinson (1980: 8), EST would seem to be both an occupational and an educational use of English. Occupational, when one considers the needs of oil workers, engineers, computer programmers etc; educational, when one considers school and university students around the world studying physics, chemistry, mathematics and engineering through the medium of English.

It is in this context that discourse on EST does not appear different from other academic pieces of discourse at the level of general, communicative features. Rhetorical principles are seen to be
related to the general communicative features of topic and purpose of discourse (Lackstrom, Trimble and Selinker 1973).

Scientific English, when considered in very general terms, possesses no separate special grammar, no special pronunciation, no special spelling or orthography of words. The scientific English is identified from its frequent use of outstandingly long groups (example right upper inlet value spring compression and level) passive verbs (the jar was covered) and considerable use of the expression of quantity, together with special vocabulary and the special symbols used in scientific and technical discourse. (Strevens 1977: 93-94)

There is clear distinction between ‘curriculum’ and ‘syllabus’. According to Shaw (1975), “…the curriculum includes the goals, objectives, content, processes, resources, and means of evaluation of all the learning experiments planned for pupils both in and out of the school and community, through classrooms instruction and related programs…” He then defines “syllabus” as “a statement of the plan for any part of the curriculum, excluding the element of curriculum evaluation itself.”

“Curriculum” as defined by Allen (1984) is a very general concept. It involves consideration of philosophical, social and administrative factors which contribute to the planning of an educational programme. “Syllabus” then refers to that subpart of a curriculum which is concerned with the specification of what units will be taught. Noss and Rodgers (1976) define a ‘language syllabuses as “a set of justifiable, educational objectives specified in terms of linguistic content”. Here the specification of objectives must have something to do with language form or substance, with language-using situations, or with language as a means of communication. In the words of Strevens (1977) the syllabus is “partly an administrative instrument, partly a day-to-day guide to the teacher, partly a statement of what is to be taught and
how, sometimes partly a statement of an approach… The syllabus embodies that part of the language which is to be taught, broken down into items, or otherwise processed for teaching purposes.”

In Wilkins’ (1981) words, syllabi are “specifications of the content of language teaching which have been submitted to some degree of structuring or ordering with the aim of making teaching and learning a more effective process”. Johnson (1982) explains syllabus as an “organized syllabus inventory” where “syllabus inventory” refers to the items to be taught. Crombie (1985) also defines “syllabus” as a list or inventory of items or units with which learners are to be familiarized. But Corder (1975) points out that it is more than just an inventory of items. In addition to specifying the content of learning, a syllabus provides a rationale of how that content should be selected and ordered (Mackey, 1982). Candlin (1984) takes a different stand when he says that syllabuses are “social constructions, produced interdependently in classrooms by teachers and learners… They are concerned with the specification and planning of what is to be learned, frequently set down in some written form as prescriptions for action by teachers and learners.”

Basically, a syllabus can be seen as “a plan of what is to be achieved through our teaching and our students’ learning (Breen, 1984) while its function is “to specify what is to be taught and in what order” (Prabhu, 1984).

2.5.2. Types of Syllabi

According to Reily (undated), there are basically six types of syllabi and the types are not entirely distinct from each other. For example, the distinction between skill-based and task-based syllabi may be minimal. The six types of syllabi are presented beginning with the one based most
on structure, and ending with the one based most on language use. The characteristics of individual syllabi are defined as follows:

i. Structural (formal) syllabus: The content of language teaching is a collection of the forms and structures, usually grammatical, of the language being taught.

ii. Notational/functional syllabus: The content of the language teaching is a collection of the functions that are performed when language is used, or of the notions that language is used to express.

iii. Situational syllabus: The content of language teaching is a collection of real or imaginary situations in which language occurs or is used. The primary purpose of a situational language teaching syllabus is to teach the language that occurs in the situations.

iv. Skill-based syllabus: The content of the language teaching is a collection of specific abilities that may play a part in using language. Skills are things that people must be able to do to be competent in a language, relatively independently of the situation or setting in which the language use can occur.

v. Task-based syllabus: The content of the teaching is a series of complex and purposeful tasks that the students want or need to perform with the language they are learning. The tasks are defined as activities with a purpose other than language learning, but, as in a content-based syllabus, the performance of the tasks is approached in a way that is intended to develop second language ability.

vi. Content-based syllabus: The primary purpose of instruction is to teach some content or information using the language that the students are also learning. The students are simultaneously language students and students of whatever content is being taught. The content of teaching is not organized around the language teaching, but vice-versa.
Content-based language is concerned with information, while task-based language teaching is concerned with communicative and cognitive processes.

Reily insists that while discussing syllabus choice and design, it should be kept in mind that the issue is not which type to choose but which types, and how to relate them to each other.

2.6. Syllabus Design

According to Webb (1976), syllabus design is understood as the organization of the selected contents into an ordered and practical sequence for teaching purposes. His criteria for syllabus design are as follows:

- Progress from known to unknown matter
- Appropriate size of teaching units
- A proper variety of activity
- Teachability
- Creating a sense of purpose for the student

According to Amran Halim (1976), the language course designer has to pay serious consideration to all the relevant variables. He has grouped all the variables into two categories: linguistic and non-linguistic. Linguistics variables include the linguistic relations between the language to be taught and the language or languages which the student uses in his daily activities. Non-linguistic variables range from policy to social, cultural, technological and administrative variable. In the words of Munby (1984), syllabus design encompasses the whole process of designing a language programme. He says that “the needs analysis which produces an order unit of items to be taught is organically related to a methodology consistent with the
sylabus, a set of techniques consistent with the methodology, and evaluation procedure consistent with the whole.

Taba (1962) advocated a general model by giving the following steps:

- Needs analysis
- Formulation of objectives
- Selection of content
- Organization of content
- Selection of learning activities
- Organization of learning activities
- Decisions about what needs evaluating and how to evaluate.

It can be concluded that syllabus design involves a logical sequence of the above mentioned stages.

2.7. Conclusion

In this context it is necessary to gather information and views on the target needs of engineering students from the learners, ex-students, placement trainers, professional engineers and English for Science and Technology (EST) practitioners. Further there is also a need to evaluate the existing ‘Engineering English’ curriculum, analyze the gathered informations and take effective measures to redesign the English curriculum which, in turn, will enhance the employability and skills of future engineers. The Third Chapter focuses on the research methodology followed to explain at length the different techniques and methodology approaches used to assess the learner needs and corporate expectations and to evaluate the Engineering English course.