Globalisation has brought in and inducted new perspectives on life in all the world nations, and, more so in India which is a multi-lingual country. With globalisation, the interchange of ideas and views across the world has become more frequent; and, it has underscored the importance of communication skills. More proficiency in English language and better global skills are closely linked to efficient communication skills on the international scenario. Due to the information explosion, the need for effective communication has increased. Acquiring good communication skills has become imperative for everybody, and more so to professionals, particularly in the fields of Science, Engineering and Technology.

To keep abreast of the latest developments and trends in the field of Engineering and Technology, professional course students must develop their communication skills. The responsibility to equip them with the needed skills has fallen on the English course designers. The syllabi and the course books prescribed for the undergraduates of Engineering and Technology courses have acquired utmost significance. The textbook is thus attracting all the attention of the teachers, students and the researchers as it is supposed to be the main instrument in making the learners fluent and proficient users of the English language.

The skills and techniques that an Engineering student acquires remain with him for the rest of his working life and it is felt that the prescribed English language textbooks should provide him with a good grounding in all aspects of communication. English language textbooks play a vital role in improving a student’s communication skills and his chances of success in the job market and also in getting him a rewarding career.
The present study aims at identifying students having an opportunity to reinforce their basic communication skills, enabling them to acquire industry-specific knowledge and skills, such as soft skills, management and employability skills. In view of the demands of the 21st century and its world-class education, professionals and the University academicians have been designing course work and textbooks to meet the challenges of the new-millennium. Such of these texts focus on the latest methods and approaches, especially the use of modern software and innovative methods available in the market to help improve the proficiency in language and communication skills of the students. This study aims at finding out how far these textbooks have been helping the students to equip themselves with the knowledge and skills that are considered pre-requisites for employment today.

To meet their communication needs, many individuals with highly specific academic and professional know-how are focusing on the need for speaking exercises as well as an emphasis on LSRW (Listening, Speaking, Reading and Writing) skills to improve the student’s ability to communicate in one-to-one and one-to-many situations. For these students, the courses that fall under the category, English for Specific Purposes (ESP), holds a particular appeal. ESP can help people become better professionals. But one point of significant note is that whatever the course material may be it is the testing pattern that decides the teaching methodologies of the teachers and learning strategies of the students.

Hence, the present study examines the approaches and testing methods in ESP for Engineering students by examining the textbooks prescribed by Acharya Nagarjuna University (Nagarjuna Nagar), Jawaharlal Nehru Technological University (Kakinada), Koneru Lakshmaiah University and Vignan University (Guntur) and the methods of training offered
to the students. All these four Universities are within the State of Andhra Pradesh, in India. An analysis of various aspects of the textbooks has been made to find out whether the objectives have been fulfilled and communicative skills are improved through the use of these textbooks. Statistical data and reports have been examined to establish the importance of the textbook and the testing pattern in the process of language learning.

To make an indepth research of the hypothesis, this dissertation also presents an analysis of the textbooks of Technical English prescribed by Acharya Nagarjuna University (Nagarjuna Nagar), Jawaharlal Nehru Technological University (Kakinada), Koneru Lakshmaiah University and Vignan University (Guntur). The aim is to find out the attitude of the students who have come from the State and Central streams [BIE (Board of Intermediate Education) CBSE (Central Board of Secondary Education) and ICSE (Indian Certificate of School Education)] towards their English textbooks in the Engineering course and the methods of learning used, approaches of teaching and testing. A review of these materials has been made to ascertain to what extent these materials or methods are in consonance with the realities, the needs, and expectations of the learners. Moreover, this dissertation offers an analysis of the extent to which these materials can convert the conscious efforts to acquire the English language into an unconscious or integral part of learning.

Vital Focus of the Thesis and Objectives of Study

The vital focus of the thesis is on critiquing the gap that lies between objectives of teaching/learning Technical English at the professional level and the syllabi and textbooks prescribed. The most glaring deficiency in the pedagogy of Technical English lies on certain
ground realities. The incompatibility of various objectives is present both at the grass-root and system levels.

The following facts point to some of the most glaring gaps that exist in the pedagogy of Technical English at the Engineering level:

1. First year students belonging to different disciplines in Engineering courses have English as a common subject. Most students expect their English syllabus to improve their communicative skills (this was evident in the survey conducted); but the course seems to do little, either directly or indirectly, with realising this particular objective of the students. This shows that the syllabus as well as the testing patterns in English, as offered by different universities, does not take into account even the primary objective of the professional students studying English in their Engineering course. Further, it also shows how oblivious and indifferent the courses have remained to the practical and realistic needs of the students.

2. There seems to be little compatibility between the objectives of the students and those of the teachers. Most students aspire that the course would somehow improve their English communicative skills; but most of the teachers teach the course in the traditional pattern which is centred on the teacher’s responsibility of completing the syllabus rather than on the learner’s desire of acquiring proficiency in English.

3. The held objectives of the students and those of the teachers seem to be different from the operational objectives. While most students do hold that improving their communication skills is their main objective in this course, they eventually give
importance to getting through the examination. The objective of passing the examination sidelines the primary objective of learning the language. Thus there is a wide gap between the held and the operational objective of the students and that of the teachers.

4. Many a time, the Technical English course does not seem to follow even the explicitly stated objectives, which renders the existing practices of evaluation meaningless.

5. Admissions to Engineering course are made through an open entrance examination irrespective of their medium of instruction at the +2 levels of different disciplines. Consequently, the heterogeneous academic backgrounds of the students are not taken care of by the course. Thus the entry behaviour of the learners, which varies, is not paid any attention.

6. Since there is no continuous or formative evaluation, the students do not get opportunities to learn from their mistakes. In the entire four-year programme, the students take just one examination either at the end of their first semester or first year. Even this examination is conducted only with the sole purpose of promoting them to the next level. The students do not get any feedback on their performance. The students are never given any opportunity to verify their scripts after they are valued and to find out their mistakes or errors in their presentation skills. Consequently, the writing skills of the students do not show any considerable improvement even by the end of their four-year B.Tech programme.
The Need for Research into ESP Testing

The rapid expansion in teaching of ESP courses is not accompanied by a similar increase in ESP testing. Perhaps, the earliest attempt in testing ESP dates back to the time when the IELTS (International English Language Testing System) was launched. At that time, in 1980, there had been little or no research into the validity of giving academic students English proficiency tests based on different subject areas. Alderson J.C. (1981), in a discussion on ESP testing, questioned many of the principles behind this approach. He agreed that since different University Departments place different demands on their students, there were some good arguments for including ESP tests in an EAP (English for Academic Purpose) test battery. He felt that a comparison between performance on academically specific tests and the communicative needs of the relevant area might provide useful diagnostic information. He also accepted that ESP tests would have really high face validity for both content-area students and University lecturers. However, he questioned whether it was possible to produce a test which would be equally suitable for students in all branches of a discipline. For example, he wondered whether it would be possible to have a test for Engineers that were of the same level of appropriacy for all Engineers, regardless of their specialisation. This highlights one of the main difficulties with English for Specific Academic Purposes (ESAP) testing.

Another difficulty with ESP tests is delineated in Alderson’s question “How specific is specific?” Since at that time, it is usually impossible to give each student a test which was tailor-made for a unique set of circumstances, any ESP test had to be a compromise and, in the
case of EAP, where many disciplines would be considered less than one broad subject area. These areas would cover so wide a field that some students would not fit into any of the groupings. Alderson cited the example of a student in urban studies who would not know whether to choose a test in Science or in Social Studies.

In relation to the ESP tests, Alderson also asked what was meant by the term "general text." General to whom? Were "general" texts so neutral that their subject matter was unfamiliar to all or were they intended to be neutral, but actually based on Humanities-based topics which might turn out to be more appropriate for Humanities rather than for Science students?

Until there are answers to the above questions, Alderson wondered how much point there was in having specific EAP tests, since they were time-consuming and expensive to produce, and since it was so difficult to make equivalent tests in different subject areas genuinely parallel. The only way one could know, Alderson said, was to carry out empirical studies. Although there has been some response to Alderson’s plea for more research since 1981, there is still room, and need, for more research.

Statement of the Problem

Over the past two decades, there have been several studies into the effect of background knowledge on EAP test performance. Three articles by Alderson and Urquhart (1983) aroused considerable interest and led to several follow-up studies. These articles described three studies carried out with students attending English classes in Britain, in preparation for British Universities.
In each, Alderson and Urquhart compared students' scores on reading texts related to their own field of study with those on texts in other subject areas. The students' scores on the modules were somewhat contradictory. On one hand, for example, Science and Engineering students taking the technology module of IELTS were found to be doing better than the Business and Economics students who took the same test on par with the Humanities students, although their language proficiency was found to be lower. On the other hand, the Business and Economics students were found to be no better than the Science and Engineering group when placed on the Social Studies module. Alderson and Urquhart (1982) conclude that background knowledge has some effect on test scores, but that is not consistent, and that their future studies should take into account linguistic proficiency and other factors as well.

Along the same lines, Shoham, Peretz, and Vorhaus (1987) conclude that the students in the Biological and Physical Sciences do better at the scientific texts, in their respective disciplines, not so is the performance of the Humanities and Social Science students even in their own disciplines of study. Their explanation for this is that the texts are only indirectly related to the students' specialised fields of study, and suggested that this might support Lipson's suggestion that "a totally unfamiliar text is often easier to comprehend than a text with a partially familiar content." (1984). This contention of Lipson is indeed radical. If supported by further research, it would be an almost unassailable reason for dropping ESP testing. If Lipson's idea were to be taken to its logical conclusion, proficiency tests would have to contain materials outside any candidates' field of study.
Research Questions and Hypotheses

The present study is an attempt at answering a few questions that pertain to University students’ performance in LSRW skills in ESP (English Language for Specific Purposes) contexts.

The objectives of the investigation can be spelt out through the following research questions posed:

1. What are the students’ needs to learn Technical English, in the global context?
2. Is there a correlation existing between the learners’ needs and the syllabus being used to teach Technical English?
3. What is the significance of the existing syllabus and is there a need for significant change?
4. What is the role of the ESP Course-Designer and Material-Producer in this context?

All these questions can be expressed in terms of the following research hypotheses.

H1. Majority of the students will have stronger needs for learning Technical English in the global context.
H2. There has been a negative correlation between the syllabus and the learners’ needs.
H3. The changes required in the existing syllabus are hence of utmost importance.
H4. The role of the Curriculum-Developer in an age of enormous and unprecedented expansion in scientific and technical knowledge language-learning.

The present system of Education has recognized the need for making use of the latest Informative Communicative Technology (ICT) for better results. This could be seen in the introduction of the language labs in the Engineering colleges to impart various language and
allied skills to the prospective Engineers as well. Still, it is the textbook which is supposed to carry on the aims and objectives of the syllabi. Hence a critical appraisal of the textbooks used in different Universities becomes imperative.

Methodology of the Study

A questionnaire was prepared to obtain the views of students, which contains questions related to their parental background and the Board of Examination through which they have taken their school final exams etc. Students were asked to share their views on the content, form, presentation, and other aspects like grammar and the four skills. A survey was conducted among the students of four different Engineering disciplines in the four Universities in their Colleges of Engineering and Technology.

Tools used for Text Analysis of Social Sciences

Researchers usually use two types of investigation processes. First is quantitative research, which employs numerical indicators to ascertain the relative size of a particular communication phenomenon. The second type of investigation process is qualitative research, which employs symbols and words to indicate the presence or absence of phenomena or to categorize them into different types. Quantitative and qualitative observations provide researchers with different ways of operationalising and measuring theoretical constructs and practical concepts. While quantitative methods can provide a high level of measurement precision and statistical power, qualitative methods can supply a greater depth of information about the nature of communication processes in a particular research setting.
The Research Methods Used in the Present Study

The present study includes the use of both quantitative and qualitative methods, endeavouring to use the strengths of each method. While the quantitative method has helped the researcher to involve a good number of subjects and the various aspects of English Teaching in the selected Universities, the qualitative method has made room for the study an indepth analysis of the responses of the subjects. It has also been observed that the subjects chosen have been found to be suitable to employ the qualitative method. A keen perception of the strengths and weaknesses of each method has enabled the researcher to make sharp analysis of various aspects of the teaching of English in these colleges.

Scope of the Study

The present study is a focus on the English course offered by afore mentioned four Universities in the State of Andhra Pradesh. Two of them – Acharya Nagarjuna University, Nagarjuna Nagar, Jawaharlal Nehru Technological University (Kakinada) are State Universities, while the other two are private Deemed Universities – Koneru Lakshmaiah University, Vaddeswaram and Vignan University, Guntur. The syllabi of these universities has been analysed thoroughly, with special focus on the objectives specified by the course structure and learners responses. The study does not make any claim to have studied the English courses of the other universities which may offer different syllabi and follow different methodologies of teaching and testing.
Limitations of the Study

The present study is confined to a selected group of students of the four Engineering disciplines (Electronics Communication Engineering [ECE], Electrical and Electronics Engineering [EEE], Computer Science Engineering [CSE] and Civil Engineering [CE]) from the four Universities mentioned above. The conclusions may or may not be applicable to the English courses of Engineering and Technology streams of other Universities which may follow different course materials and teaching and testing methodologies.

Data Analysis

The Data was collected from 180 students from each University and has been presented on the three point scale Questionnaire. It has been analysed and interpreted to test the hypotheses framed and to fulfill the objectives stated. The data has been presented in the form of tables, graphs and figures. Simple statistical techniques have been employed, depending upon the nature of the data collected.

Conspectus

Chapter I of the thesis offers a bird’s eye view of Universities involved at present in the process of rethinking and restructuring their English language curricula, keeping in view better options that go with the general objectives of Engineering and Technology Education. For more effective instructional content, several institutions consider ESP as an intelligent option. The general objective of an Engineering Course is to impart technology-based knowledge and also to develop the professional skills of the students for immediate employment and a successful career. To achieve this, ESP courses make use of special
vocabulary tasks related to negotiation skills and also effective techniques for oral presentation. The course takes into consideration the communicative needs and practices of the professionals of Engineering and Technology streams. The ESP programme is designed to strike a balance between Educational Theory and practical considerations that ought to follow. ESP also increases students' skills and confidence in using English.

Chapter II offers an analysis of English for Specific Purposes (ESP) in the present-day educational scenario and the need for such an approach in the selection of textbooks for the Engineering College students. In this chapter, four key points related to ESP have been examined. They are as follows:

a) The distinctions between the absolute and variable characteristics of ESP

b) Types of ESP

c) Characteristics of ESP courses

d) The meaning of the word 'specific' in ESP.

Chapter III, IV, V and VI offer an analysis of the syllabi and the course – content and the textbooks prescribed for Engineering students in Acharya Nagarjuna University (Nagarjuna Nagar), Jawaharlal Nehru Technological University (Kaknada), Koneru Lakshmaiah University (Vaddeswaram) and Vignan University (Guntur) respectively. It has involved the collection of information and development of a profile of the needs of this group of learners (Engineering students). The survey has included:

- Determination of who the students are (e.g. their educational background, prior experiences with English, attitudes towards English and the English needs).
• Determination of the students' language abilities (e.g. their communicative abilities, pragmatic competence, strategic competence, and formal knowledge of English).

• Determination of which language skills, language strategies, content and experiences the students need and for what purposes.

• Determination of gap between what the students are able to do and what they need to do.

Chapter VII offers an overview of the syllabi of these four Universities, and presents the findings of the study, providing at the same time few suggestions and recommendations for future research.

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