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## ANALYSIS OF TECHNICAL ENGLISH: METHODS, MATERIALS AND TESTING IN ENGINEERING CURRICULUM OF JNTU-A DETAILED STUDY

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### Abstract

Any course has to be designed to meet the immediate needs of the learners. Given a learner or a group of learners with, a specific purpose in learning English, it would seem logical in a learner-centred approach to base course on that purpose and on the needs of the learner in his situation. Once a learner's needs have been defined, in terms of why he wishes to learn English and the kind of English he will have to use, this information can be used as a guideline for the content of a course suited to his particular interests and needs. The next development, that- greatly influenced ESP programmes was a move towards a view of language as not only a set of grammatical structures but also a set of functions. This view is essentially behavioural, that is, we use language to communicate' with people and to cause, things to be done, to describe and explain events, to qualify and hypothesis. This not only seemed theoretically attractive but also fitted with the approach to learners' needs described above. In addition, since many learners in ESP situations already possessed a grammatical knowledge of the language, this 'communicative' approach provided them with an opportunity to use this knowledge more productively than had been possible before.

**Keywords:** Occupational Mobility, Specific Groups, Designing Materials, Language Laboratories, General English Words, ELT Programmes, Group of Communications.

### Introduction

#### Statement of the Problem

Language comes first. It's not that language grows out of consciousness, if you haven't got language, you can't be conscious.

– Alan Moore

#### A Britisher, familiar personality in English Literature

Professionalisation of higher education entailed English language Teaching (ELT) branching into a new discipline that has come to be known as English for Specific Purposes (ESP). The importance of English as a global language continues to increase as more and more people use. English for different purposes. For example, governments are introducing mass education programmes with English as the first, and sometimes only, foreign languages; the growth of business and increased occupational mobility is resulting in a need for English as a common medium of communication; and access to much scientific and technical literature is difficult for those with no knowledge of English. These demands and requirements have resulted in the expansion of one particular aspect of English Language Teaching (ELT) - namely the teaching of English for Specific Purposes (ESP). The demand for this has often come from groups of learners with no need for the 'general' English provided by a typical secondary- school English course. Some learners, indeed, have already completed a 'general' course to learn English for particular reasons connected with their studies or their jobs. Some may be attending a university course in an institution where English is the medium of instruction and find they have difficulty in understanding lectures or participating in seminars. Others, working in commerce, may realize a -specialized course in English would help them in reading reports or conducting business transactions.

#### English for Specific purposes

This is one of the reasons for the development of ESP. Teachers are faced with learners, often adults, who already had some knowledge of English acquired in a school situation, and who now, in contrast to their former school learning experience, were well aware of their purpose in learning the language. Most of the materials and courses available were appropriate for those coming to the study of the language for the first time, were suitable for younger learners and were written as 'general' English courses. A gap in materials had to be filled for these specific-purpose learners. The academicians have begun to recognise the problems of these learners. Developments are taking place in other fields, which came to be influential in filling the gap left by ELT courses, both EFL and ESL. One development was the move towards a focus on the learner as a main consideration in course design. This had implications for ELT programmes in that the learner and his needs were now taken as central to the problem of deciding course content. Any course has to be designed to meet the immediate needs of the learners. Given a learner or a group of learners with, a specific purpose in learning English, it would seem logical in a learner-centred approach to base course on that purpose and on the



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needs of the learner in his situation. Once a learner's needs have been defined, in terms of why he wishes to learn English and the kind of English he will have to use, this information can be used as a guideline for the content of a course suited to his particular interests and needs. The next development, that- greatly influenced ESP programmes was a move towards a view of language as not only a set of grammatical structures but also a set of functions. This view is essentially behavioural, that is, we use language to communicate' with people and to cause, things to be done, to describe and explain events, to qualify and hypothesis. This not only seemed theoretically attractive but also fitted with the approach to learners' needs described above. In addition, since many learners in ESP situations already possessed a grammatical knowledge of the language, this 'communicative' approach provided them with an opportunity to use this knowledge more productively than had been possible before. To put it short, ESP has its basis in an investigation of the purposes of the learner and the set of communicative needs arising from those purposes. These needs will then act as a guide to the design of course materials. This kind of English to be taught and the topics and themes through which it will be taught are based on the interests and requirements of the learner. The skills to be taught may be restricted. For example, a needs analysis may reveal a priority for listening, and materials may be highly specific to suit special groups. Take a group of communicators at international level. They need to concentrate on listening and speaking and will specific materials.

### The Problem of Research Area

The present work is empirical in nature. It undertakes the examination of the teaching of communication skills in the system of affiliated colleges in India. Thousands of engineering colleges are affiliated to the state level universities in the country. The stream of students taking admission to these colleges are different from those belonging to the elite institutions like the. Indian Institutes of Technology (IITs), the National Institutes of Technology (NITs), Jawaharlal Nehru Technology University (JNTU) Hyderabad and other premier institutes governed under the central university system as well as the deemed university system. The student community under question is rural and regional medium educated, and therefore, lag far behind in communication skills. Because of this deficiency, these students find it difficult to secure jobs in the corporate sector as well as abroad. There is a need for redesigning the course content and a paradigm shift in teaching methodology focusing on mentoring. A change in materials entails the need for the study of the teaching materials and the testing and evaluation pattern in vogue so as to assess the teaching and learning of English in the rural engineering colleges. As part of this, the researcher made a case study of the teaching of English in the affiliated colleges of Jawaharlal Nehru Technology University (JNTU) Hyderabad particularly in Telangana region.

### Hypothesis of the Research Paper

The teaching of English in India in general is traditional in the sense that the materials, methods and testing and evaluation is content based and not skill based, and this can be accounted as one of the reasons for the poor performance of the Indian students at the national and international level competitions. The teaching of English in the technical institutions is no exception to this. The student community pursuing their studies in the premier engineering colleges is elite and English medium educated, therefore they face no problems in communication. When it comes to the local and rural engineering colleges, the composition of the student community is rural, poor, culturally marginalised and regional medium educated. To add to this disadvantage, the English course in these colleges does, not focus on the skill development. The hypothesis of the present work, therefore is that the course content in the affiliated engineering colleges of Telangana region in particular and other such colleges in the country in general does not cater to the needs of the learners, and that there is no component in the course that would enable the learners develop' language skills. There is a need to develop course content focusing the needs and background of the target learners in these colleges.

### Objectives of the Research paper

The primary objective of the present work has been to examine critically the course content of English in the first year of the B.Tech courses in the affiliated colleges of JNTU Hyderabad in Telangana region, Warangal. The work also set the following sub-objectives as the part of the work:

1. To critically study the course material in English;
2. To examine the instructional objectives of the course;"
3. To elicit the responses of the students in respect of materials and teaching methodology;
4. To find out the efficacy of grammar component in the course;
5. To analyse the examination pattern of the course; and
6. To present the findings and relevant recommendations of the study.

### Methodology and Research Design

The present work, being empirical in nature, has drawn material by undertaking proposed to fieldwork. The researcher collected material on theory of English Language Teaching from books, journals, periodicals, essays, articles and Internet websites in the area. The empirical data has been collected by undertaking fieldwork.



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Let us familiarise ourselves with the terms used in this area of study. A number of terms for various varieties of ESP are current and it is useful to know what they mean and what sort of ESP programmes they describe. They 'deal with very broad distinctions within. ESP; for teaching purposes much finer distinctions are required, as we shall see later. However, they do begin to provide an overall picture of the main groups of learners, which might be of concern to an ESP teacher. There are three main subdivisions, which help distinguish ESP situations. These include English for Occupational Purposes (EOP), English for Academic Purposes (EAP) and English for Science and Technology (EST). Let us take a look at these three varieties in a detailed way.

### English for Science and Technology

The next one is English for Science and Technology (EST). Much of the demand for 'ESP, has come from scientists and technologists who need to learn English for a number of purposes connected with their specialisms. It is natural; therefore, that English for Science and Technology (EST) should be an important aspect of ESP programmes. The term EST presupposes a stock of vocabulary items, grammatical forms, and functions, which are common to the study of science and technology. One needs to bear in mind two points in this context. Firstly, the terms ESP and EST have been used loosely at times and it is easy to gain the impression that the two terms are synonymous. This is not so, since EST is simply an important branch of ESP, dealing with scientific content. The second point is that the term EST is too general to be of great use in the design of ESP materials. The notion of EST has often led in the past to teaching materials with a scientific bias but which did not serve the needs of the learners. A scientist may need to operate in English in a number of different situations. He may be required to present a paper at a conference, exchange views informally at social gatherings, read relevant literature on his subject or write a paper. Each of these situations will demand a different language skill and a different range of communicative abilities. Add to this the fact that the scientist's specialisation may be anyone of a numerous range of disciplines, such as agriculture, civil engineering or biochemistry, and it is clear that the notion of EST is too general if the needs of the learner are to be taken fully into account. These classifications serve to illustrate some of the differences between various situations, which will be reflected ultimately in the level, and content of teaching materials. However, the distinctions are still very broad and the learning situation needs to be defined more precisely.

The success of the programme depends on the teachers (both of English and of specialist subjects) and their attitudes. ESP geared to a specific discipline is only possible, and then to a limited extent, where language teachers are willing to learn something about the relevant subject. They often lack confidence in approaching specialists, and this can compound linguistic problems they may already have if English is their second language. In addition, they may or may not have received a sound basic training in ELT. These variables have to be allowed for in the materials, either by adapting the materials, themselves or by ensuring that materials development is an integral part of training. The role of the engineering teachers also determines the success or failure of a programme. This aspect concerns the role of the subject teachers, since any decision to use an ESP approach relating to a specific subject will inevitably demand some degree of co-operation between language and subject specialists. If this co-operation is not forthcoming, then an approach less related to the content of the learners' subject speciality may have to be adapted.

Learners are the main component of the ESP. The designing of the ESP courses needs to take into account the learner as a main component; The aspects of age, level and motivation of the learner play a great role in the learning and teaching of the ESP programmes. Let us look into these aspects in a little detail. The age of the learner is an important aspect: older a learner is the more likely he is to have his own definite ideas on why he is learning English. In fact, many ESP learners are adults. For someone who has left Secondary school and is now returning to or continuing his studies of English, the utility of learning English is likely to be more apparent. It is then a question of matching the needs of the learner as he sees them with his needs as perceived by his teacher. There is likely to be more agreement on needs between teacher and student at adult level since the purposes are more clearly defined.

The level of the learners plays a vital role in the design of the ESP. The balance which has to be maintained between the linguistic and the conceptual level of the learner is perhaps more evident in ESP programmes than in general English. The learner may, for instance, be a trained scientist or technocrat able to operate within his field in his own language but not in English. The teacher's task here is to teach language, but the texts he chooses must be significant to the learner in their content. This presents problems to the teacher who may be insecure or lacking in specialist knowledge when faced with specialist texts. Alternatively, the learner may be lacking in linguistic skills and the ways of thinking appropriate to his particular discipline. The teacher's role and the aim of the materials are inevitably to teach both language and content, with or without the co-operation of specialist subject teachers.

It should be made possible to find out a learner's motivation for learning English and match the content of the course to this motivation. The chances of successful language learning should be increased. There are, of course, varying levels of motivation, which makes the situation more complex. With high motivation a learner is much more likely to succeed. If, however, a course is designed to match a given motivation then the student will feel encouraged and his motivation is likely to remain higher. The



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matching of course content and their motivation level should match with each other. Problems occur either if the course content and the learner's motivation do not match, or if the level of motivation is low in the first place. In the latter case, materials have to be carefully designed to raise this motivation or an artificial motivation may have to be created. For example, an exam in English, which counts towards a final qualification may help in this regard. In this connection, Roe (1977) suggests three levels of motivation to learn English. Level One, the highest level, when English is required to obtain a degree or a desirable job or to get promotion; Level Two, to improve exam grades or influence positively career prospects; and Level Three where English could increase the student's status, be useful if he went abroad, or widen his knowledge and interests. This system of level assumes instrumental motivation (where the learner identifies with the social or cultural aspects of learning English). It is generally assumed that ESP programme, by its nature, tend to emphasise the instrumental aspect of a student's motivation.

What should be kept in mind is that the teacher must be careful not to assume that a student studying in English is guided entirely by instrumental motivation. The situation is rarely as clear-cut as that and many students, especially those studying within an English-speaking community, feel a need for ESP for reasons, which are plainly integrative rather than instrumental. There is also a danger in assuming that someone really wants to become an engineer simply because he happens to be studying engineering and that, therefore, teaching texts should be based exclusively on his subject specialism. In many educational systems, entry to the subject specialism of one's choice is dependent on school exam grades. It may be that our hypothetical engineering student really wanted to study medicine but failed to achieve sufficiently high grades. He may, therefore, have negative feelings towards engineering and may be poorly motivated to study engineering texts in his English class.

### Implications and Conclusions

This research paper lastly discusses the implications of the study and provides conclusions. It is composed of four sections. The first section deals with implications of the study for language education. The second section addresses the limitations of the current study. The third section points to some future directions of curriculum implementation research in English as a second or foreign language education. The final section contains conclusions based on the findings.

To date, very few large-scale empirical studies of tertiary language curriculum implementation have been conducted in India. Therefore, this study has implications for EFL language education in India as well as in other EFL contexts. This section discusses implications of my study within a wider context in the curriculum implementation field. Previous studies have revealed that problems and challenges are likely to emerge when a proposed curriculum is implemented in local institutions. In any educational jurisdiction, failing to attend to possible barriers precludes classroom lecturers from following the guidelines expected by policymakers. Realization of intended curriculum is often much more difficult than imagined; this is why policymakers expect lecturers to adhere strictly to their plans. In fact, in many cases, implementing the intended curriculum literally may be impossible. The complexity is attributable to diverse causes. O'Sullivan argued that, in the case of English teaching reforms in Namibia, the failure of policymakers to consider the realities of the local contexts the lecturers worked in ensured that the implementation was superficial. Reforms were significantly beyond the lecturers' capacity; consequently, lecturers did not implement them. This non-implementation scenario reminds policymakers to be sensitive to local realities and needs. Bekalo and Welford found an inverse relationship between stated policy objectives and the teaching and learning activities prescribed in the textbooks, and between policymakers' intentions and the assessment practices. Their results revealed that the link between policy and practice was, at best, tenuous. In another example, from focus group discussions, Miller and Aldred explored student lecturers' perceptions regarding the suitability and usability of communicative language teaching and also found a mismatch between ideals and reality in the language classrooms of Hong Kong.

However, the findings indicated that, contrary to the expressed design of the syllabus, classroom lecturers carried out instruction based on their classroom reality, by mainly following first the testing syllabus and then the textbooks. They could be said to have only partially implemented the intended curriculum. On the one hand, they implemented the administrators' regulations by focusing on developing students' reading skills. On the other hand, they failed to adhere to the intended curriculum as expected by the national policymakers, for instance, a more learner-centred approach, entire use of the target language in classroom teaching, and more cultivation of students' communication abilities. Surprisingly, the study provided evidence that the most significant factor contributing to lecturers' curriculum implementation was not the testing, as had been suggested in the literature.

Therefore, prior to implementation of any new curriculum policy, a detailed analysis of existing systems, especially the different cultures of organization and the contexts where lecturers work should be conducted (White, 1988). More importantly, to ensure smooth implementation, it needs to be remembered that the role of administrators is critical. They bear dual responsibilities, of interpreting accurately the policies from the top, and of providing the lecturers with constructive professional development programs and other supports. The administrators in this study failed to support lecturers in understanding and carrying out the policy. I conclude,



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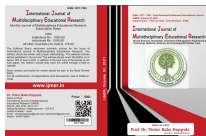
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however, that this mismatch may have been unavoidable during the implementation process. I would suggest in a case like this, however, that the expectation of a close match between the intended and the enacted curriculum by policymakers and administrators who have articulated and operationalised policies and regulations at different levels is unreasonable. To account for the changing needs of engineering graduates, since 1998 the "Presentation Techniques" course has been offered at the Faculty of Electronics and Information Technology, Warsaw University of Technology.

Our "Presentation Techniques" course is getting increasingly more interest among the students and also among the members of the academic staff responsible for the curriculum development. There are suggestions to make this or a similar course compulsory for all students in some areas of concentration. There has been also some interest in the course outside the faculty. The instructors received several e-mail messages requesting a permission to use some parts of the course materials available on the Web during lectures given at different institutions. Since the introduction of the course, several changes have been made to improve its contents and organization. The researcher intends to continuously upgrade the course and our teaching techniques. In particular, we plan to use a projector attached to the computer for students' presentations. Another idea is to videotape students' presentations and use the relevant parts of the recorded presentations in the follow-up discussions. The researcher is also developing an Integrated Internet-based Environment that would allow for electronic circulation of most course documents and for monitoring the student access to various materials available through the course web page.

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