PREFACE

EST: English for Science and Technology is a major subdivision of ESP. Its origin is attributed to the unprecedented increase in scientific and technical endeavour. The remarkable explosion of knowledge in Medical and Physical Sciences, and many other scientific and technological developments have necessitated the acquisition of greater proficiency in English because the aforesaid scientific and technological achievements are more accessible in English than in any other language. Therefore English has emerged as potent means for the students of science to pursue higher education and communicate their findings worldwide. In addition, English also plays an eminent role in the professional careers of doctors and engineers because it substantiates their professional performance and hence enables them to catch up with the time. However, it is generally admitted that the present course materials for language teaching are literature oriented, hence less conducive to the development of the communicative competence the students of Science should acquire in their academic and later in their professional careers. So the ELT specialists have felt a need for evolving innovative methods of teaching and producing such course materials that may prove to be more rewarding and relevant. EST is, in fact, the result of the services that the linguists have rendered in the field of analysis of the
specific discourse of science and technology in order to design adequate course materials that do cater to the immediate needs of the students of science.

The basic aim of EST is to develop the communicative efficiency the students of science really need in pursuit of all their academic and professional careers. EST learners are especially concerned with utilitarian purpose of language use in science and technology. Thus the specific needs of the students are of paramount importance in EST curriculum.

EST has two major aspects. The first is its pedagogical aspect which is concerned with the teaching of English to the students of science. Another is its structural and discoursal aspects which are the main thrust of the present study.

In fact, this study began with an effort to analyse the essential nature of scientific and technical English by identifying its major characteristics as distinct from other forms of written English. Attempt has also been made to bring under critical assessment the specific format the entire scientific community strictly follows in writing scientific research articles.

It has been explored that there are some conventions that govern the writing of scientific research papers; thereby rendering them so stereotypical in nature.
The first three chapters deal with scientific language in terms of rhetorical functions of description, definition, classification and the rhetorical techniques of time order, and causality.

The ivth chapter entails our practical analysis of scientific research articles followed by elaborate discussion on the use of tense and aspect in EST texts. This has been further exemplified by analyzing some of the recent scientific events and some of its linguistic and conceptual frames from both a general and a specialist perspective.

The ivth chapter also concentrates on some of the features that characterize English used by its non-native users for scientific purpose. Some of the errors committed by them at various levels in sentence formation have also been explored. Several remedial measures have also been discussed therewith at length to prevent the occurrence of the grammatical errors as committed by the non-native users of English in scientific texts.

The major concern of chapter vth is with the discussion of the development and expansion of scientific vocabulary. I have also analyzed the lexical elements by classifying the different types of technical terms on the basis of their opposition to their vernacular meanings. Therefore, words have been classified into general, specialized and sub-
technical categories against the perspective of the teaching of scientific vocabulary.

The conclusion focuses on the pedagogical aspects as well as on the preparation of course materials. I have suggested the use of interactive and result oriented methods of teaching in the class in order to develop the language competence the students of science really need in the pursuit of their professional careers. With regard to the course materials I have recommended the introduction of technothrillers in EST classrooms. Technothrillers are stories and plays based on scientific facts and findings. The students of science may enthusiastically learn English through such course materials as are science oriented because such materials are inherently relevant to their present needs.

I have discussed those characteristics of scientific and technical English writing that make them different from other forms of written English discourse. On this account this study offers greater insight into the nature of scientific and technical discourse.

In fact the idea of my research on scientific English was conceived during my association with Muslim Association for the Advancement of Science (MAAS). There
I served as editor of a science newsletter and therefore, had the advantage of working closely with eminent scientists who were also well versed in English. To them I record my deep obligation. To be more specific, it was while discussing academic matters over with Prof. Ziauddin Sardar, a prolific British researcher and writer, that the idea of research on this aspect occurred to me.

The final motivation for a systematic study of scientific English within the framework of EST came from my esteemed supervisor Prof. F.U. Khan, Chairman, Department of English, A.M.U., Aligarh. His book, ESP Vocabulary and Medical Discourse consolidated the idea of my research and aroused in me a keen interest to pursue research in this domain.

From the very beginning of my research, Prof. Khan has been the motivating force behind the application of multiple-level research principles, specially adopted for this study at which EST discourse can be researched and taught. It was a pleasure and privilege to work with him. In spite of his very busy schedule he always found time to guide my research. I must place on record my heartfelt gratitude for his indigenous and brilliant suggestions.

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