Technical Writing in English - Some Perspectives

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Abstract
The paper begins with an introduction on the importance of English, moves with a brief outline on technical writing in English, highlights some of the notable differences, in terms of written communication, between general English and technical English, advocates 'experimented' strategies for augmenting technical writing in English and ends with a conclusion emphasizing the need for developing the technical writing skills of students.
Key words: Technical writing, passivity, technical report, tables and charts, technical English, general English

1. Introduction

There was a time when Indian students, after completing their education at higher secondary schools, opted for courses of science and humanities more than those of engineering and medicine, because the number of institutions for engineering and medicine was much lesser. In spite of the mushrooming growth of educational institutes offering courses in engineering and medicine, the demand for such courses has exponentially increased. Students of engineering courses are quite aware of the fact that a sound knowledge of English is indispensable in order to keep themselves abreast of modern developments in science and technology. The professional institutes aim at developing the technical writing skills of students through task-based approach, various language-oriented and learner-centered activities.

English, for more than a century, has been occupying a prestigious, prodigious and privileged position in India. It has been playing a pivotal role in the Indian system of education and in every sphere of our activity. Its status as an international language is unrivalled. English, in the present arena, has become the predominant language of science and technology. It is not an exaggeration to state that those who develop their technical writing skills may find themselves intellectually superior in their professional careers. Students of the present day, unlike those in the earlier periods, are living in the world of professional competitions. Mere educational qualification does not help them come off with flying colours in the global world. There was a time when English was used mainly for wide communication, but now it is being used for technical exposure and even for one's successful survival. Current trends in the global market indicate a sea change to be effected in the teaching scenario. Even students with a good academic record fail to transmit knowledge of their respective subjects, mainly because of their poor writing skills. By and large, lack of good writing skills is a great barrier to a successful future.

Even in developed countries like USA and UK, many of the employers, as highlighted by a number of surveys, look for their job candidates to exhibit excellent writing skills, besides good oral skills. Employers taking part in NACE's Job Outlook 2010 Survey, ranked communication skills, in particular, good technical writing skill.at the top of the skills they seek in potential employees, besides analytical skills, the ability to work in a team, technical skills and a strong work ethic.The American Management Association (AMA) 2010 also stresses the need for enhancing the technical writing skills of students, in addition to the skills such as communication, critical thinking, collaboration and creativity (the four Cs), as they are very important to organizations in the future. The AMA survey defines effective communication as the 'ability to synthesize and transmit one's ideas both in written and oral formats'. In short, globalization and internationalization have raised the demand for effective technical writers in English.

2. Technical Writing in English

Technical writing' cannot be merly defined as 'writing for technical purposes'. Strategies for 'technical writing' need careful planning and concentrated effort for the fruitful outcome. Students, up to their higher secondary level, have insufficient exposure to technical writing. The previous study of preparatory English is based on structural methodology. Students who are able to write essays, paragraphs, letters, poems and so on find it difficult, when it comes to writing a technical description or a report. Teaching of the plays of William Shakespeare, John Milton and the poems of William Wordsworth and Shelley makes students develop a taste for literature, but it does not develop the technical writing skills of students. Teaching is technically contextualized by means of techniques based on a structuralism with focus on technical descriptions, expressions and exposures in English. At a graduate and post-graduate level, students become conscious of the use of English associated with an occupational, vocational, academic or professional requirement. When it comes to technical writing in English, what is needed is the definition, indication or rather guidance of a clear learning strategy / methodology in terms of technical purposes to which English is used, whether it be writing technical reports,

case study or feasibility reports, lab reports or description. Learners must be taught to demonstrate their technical writing skills in the required area.

3. General English and Technical English

3.1 General English and Technical English – Major Differences

In general English, 'how something is written' is more important than 'what is written'. Power of imagination, creativity, emotions, feelings and sentiments matter a lot in the former, whereas there is scant regard for imagination, emotions, feelings or sentiments in technical English. Only unbiased facts are presented in technical English. For instance, William Shakespeare's English is marked by literary expressions whereas Albert Einstein's is filled with scientific ideas expressed in a clear, concise style.

3.2 Purpose of Writing

In general English, the purpose of writing is not only to convey ideas and thoughts but also to present them in a manner enjoyable to readers whereas in technical English the purpose is to communicate rather than impress the readers. For instance, defining the purpose a technical report provides us inputs on the language to be used, the structure to be employed, the appropriate mix of visuals with the text and all other considerations required for presenting the information correctly and effectively. Use of language, choice of words, identification of structures, creativity, imagination, pouring of emotions, feelings and sentiments, narration, telling of stories, definitions and descriptions, elaboration of ideas are penned in general English, but technical writing has specific purposes. The purpose of writing a technical report needs, at first, a clear definition. Generally, a technical report aims at serving the following four purposes.

John Milton said, *"Before I die, I want to leave something which the posterity will not willingly let die"*. Similarly, a technical report can be written for posterity in order to show one's friends, relatives, children and dear and near ones the involvement in writing some serious piece of work. Or it can be written for showcasing- to show the initial work on a specific technical area that can fetch one either a job or some honour through a technical write up. Or a technical writing may aim at getting some fund – to be used as a presentation before a funding agency or a venture capitalist that makes a beginning in one's career as an entrepreneur. Or writing of a technical report may aim at selling some technical concept. A technical concept is written to explain the features of a product or service that can sell the concept to a prospective buyer. So writing a technical report serves a specific technical purpose, unlike writing of a poem, play or a story. Mere grammar-based questions, definitions of grammatical terms, writing of essays, paragraphs, letters, memorizing vocabulary, listening to English lectures etc alone do not help one develop technical writing skills of students. Technical use of a language does not mean 'knowing about the language', but 'knowing the language' and using it correctly, precisely and effectively during communication.

Thompson and Wyatt in their book 'Teaching of English in India' (pp 15) say, "The power of expression in a language is a matter of skill rather than of knowledge. It is a power that grows by exercise, not by knowing meanings or rules".

Teaching of technical writing becomes effective, when and if students are actively involved in the process of written communication, and therefore many opportunities should be offered to them to write the language meaningfully and effectively and to review their writing with their classmates and teachers spontaneously. Further, a language is best learnt when the learners are actively involved in the four macro-skills with emphasis more on productive skills- speaking and writing. Challenging and task-based exercises in technical writing helps students achieve their writing competency.

3.3 Base of a Technical Report

The base of any technical report is content. So the focus of a technical report is more on the 'wealth' of content rather than on the 'length' of language. Thus the strict adherence to the rules of grammar, use of most appropriate words and literary expressions not only blot the unique characteristics of technical writing, but also curb the interest of students, while drafting a technical report. Too much correction of mistakes and grammar definitions and instructions can block the interest of students. Besides, making mistakes is a developmental stage in language learning. Many researchers have identified 'fear of making grammatical errors' as one of the factors for the lack of poor technical writing skills of students.

3.4 Use of tenses

In general English, all twelve tenses are contextually used, but in technical English, present tense is preferred, as facts are presented in simple present tense. Consistency of tenses is important in both general and technical English. A technical writer does not write sentences such as:

> *Water is boiling at 100'c.*
> *Internet was a great boon.*
> *I had been using an 'L' tube for this experiment.*
> *We are introducing air through a nozzle into a tank of water to form a stream*
> *of bubbles*

3.5 Use of Voice

In general English, both active and passive forms are used, whereas in technical writing, only impersonal passive forms are preferred. A technical writer wants to be impersonal. In technical writing, 'what' and 'how' are more important than 'who' or 'by whom'. A technical writer avoids sentences as follows:

These supports are called by my friend bearings.

This type of metal is cast by Tom and his uncle into complicated shapes

The chemical engineering professor is mixing the chemicals now in the presence
of his students.

Consistent use of simple present tense and impersonal passive forms are preferred
in technical writing. But in general English, use of appropriate tenses adds beauty
to the language.

3.6 Choice of words

In general English, archaic and modern words, phrasal verbs, idioms and phrases are freely used, as the purpose is to convey, impress and even to attract the readers, but in technical English, use of idioms and phrases is avoided. The purpose of a technical writer is not to show of his/her proficiency in English, but to present the facts in a simple language that can be understood and can pave for further research or inventions. The choice of vocabulary depends on the subject of the report. But a good vocabulary is essential for clarity, power and precision. Improving vocabulary can come from incidental learning from context, direct learning or a combination of all these. The best incidental learning comes from reading good books and associating with people who have a good spoken and written vocabulary. Direct techniques include the use of dictionary. .

3.7 Sentences and paragraphs

In technical writing, long sentences are avoided. Sentences need to be complete and meaningful. Every sentence must communicate the essential facts. Repetition and redundancy must be avoided. Use of connectives such as 'as soon as', 'even though', and 'as long as' is avoided. Short paragraphs with adherence to points in coherence make technical writing effective. The sentences and paragraphs must have a natural flow.

3.8 Use of abbreviations and acronyms

Use of abbreviations and acronyms is inevitable in technical writing, but unfamiliar abbreviations and acronyms may have their expansions within brackets in technical writing for better understanding of the readers.

3.9 Headings

A technical report needs a suitable title. The title gives the readers some idea about the content. Untitled reports do not seem to be professional in the eyes of the readers. The format for any technical report includes a suitable title. Main title and sub-headings add beauty to any technical write up.

3.10 Use of tables and charts

Brevity is the soul of wit. Elaboration of sentences and narration, beating about the bush may be enjoyable in general English, but in technical English, the information can be presented through suitable tables and flow charts.

3.11 Consistency

A technical writer needs to be consistent in the use of words, construction of sentences, paragraphing and grammar. There needs to be consistency in heading formats, diagrams and illustrations. The ultimate purpose of a technical writer is not to win the 'hearts' of the readers by means of using a powerful language, but winning the 'minds' of readers with the effective, precise and accurate presentation of facts. When a technical writer enumerates the practical applications of Newton's Law of viscosity, the attention of the readers is more on obtaining the technical information rather than on appreciating the language. Though content is more important than style in technical writing, it will be spic and span when both are good. Thus, writing and re-writing a technical report is one of the factors to perfection in technical writing. A good technical writer becomes his/her own critic and effects necessary correction in his/her own writing to obtain perfection. In any work that needs perfection, the number of concentrated attempts matters little.

Conclusion

Remarkable changes are emerging in all disciplines of science, engineering and technology. To keep abreast of modern developments in science and technology, a sound knowledge of English is indispensable. Lack of good technical writing skill is not only a lack of confidence and interest, but also deprives a wide exposure to the latest developments. Therefore, developing excellent technical writing skills is absolutely essential for students of engineering and other technical disciplines so as to have a successful and prosperous career in the chosen fields.

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