

Technical Research Paper Writing

1. Introduction

Twentieth century is the indispensable age in the growth of industries, science and technology. There is revolution in the field of knowledge. Today we have innumerable national and multinational companies in our country. People working in these companies conduct researches, participate in seminars and conferences to present their research papers to convey relevant information. Hence, they have to inculcate¹ the ability of writing good technical research paper so that they can get success as research scientist, chemist, research officer and so on. A researcher has to supply information regarding the result of the experiment.

1.1 Meaning and Significance of Technical Research Paper

Meaning : Technical Research Paper may be termed as a technical report which “is a document that describes the process, progress or results of technical or scientific research or the state of a technical or scientific research problem.”

Generally, a technical research paper is based on the conclusions derived after conducting experiments in a laboratory or in the field. The researcher first collects the data and after analysis records the findings. It, henceforth, includes the findings alongwith recommendations and conclusions of the research.

1.2 Significance of Technical Research Paper

The purpose of a technical research paper is different from other types of research papers. It aims at three things: to inform, to instruct and to persuade. The technical research paper aims at changing people's opinion about a research problem. Also, it tries to persuade them to use new approach regarding a research problem. Moreover, the technical research paper adds to the existing fund of knowledge. In brief, such technical papers are the need of the hour as they help in furthering the industrial growth. Mainly, they help in:

1. Transferring technical knowledge
2. Preserving it for further growth and
3. Disseminating² technical knowledge of a specific field.

2. Style of Writing Technical Research Paper

1. Identity the purpose of writing technical research paper
2. Use of proper and relevant technical terms
3. Come straight to the point

1. To learn; 2. To spread.

4. Use of active and not passive voice
5. Use modern language i.e., avoid use of obsolete³ or out of date words
6. Use illustrations
7. Accuracy of language
8. Use bias free language
9. Use of right tone
10. Discuss and describe data in a systematic way
11. Written in formalized structure

2.1 Elements/Steps in Writing Technical Paper/Article & Scientific Article

Technical articles as well as scientific articles are formal technical documents hence they follow definite strategies⁴ of writing. Below are listed the chief elements or steps in writing technical article and scientific article:

1. **Title:** At the outset, a comprehensive⁵ title of an article should be given which may indirectly throw light on the content of the article. An inadequate⁶ title may lead to confusion and will rouse doubts. Thus, a title which is complete in form is able to communicate to the readers the content being discussed in the article.
2. **Name of the Author:** The author's complete name must be placed just below the title on the title page. Next to that writer's address and the name of the institution must be placed.
3. **Abstract:** The abstract contains the necessary information regarding the content of the article.
4. **Introduction:** Introduction is the next important element of the article which introduces the topic or the problem which is being considered by the writer. It shows the worth of the problem and also discusses in brief the facts included by a researcher in the course of his study.
5. **Objectives:** The researcher will bring into light the purposes of the study and also make statements about the type of analysis it is going to make.
6. **Methodology:** There will be a detailed description of the methodology, so far adopted in the course of study. It will also throw light on the basic design of the article, experiments carried out, selection of the sample of study and the statistical measures adopted by the researcher.
7. **Findings, Inferences and Recommendations:** The most important part of the article is the statement of findings, inferences drawn and the recommendations made on the basis of the analysis of the results. At this stage, the researcher makes his best efforts to organize his ideas and the accumulated research into a logical, fluent and effective way. Moreover, it may explore the possibility to conduct further research in the concerned area.
8. **Appendices:** The technical article and the scientific article may include appendices also including any other information left. Besides, there may be some other information relating to the area of research.
9. **References/Bibliography:** On a final page of the research report, an alphabetized list of research sources should be mentioned. These sources may include a list of books, articles, periodicals, interviews and online sources.

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10. **Acknowledgements:** This last section includes the writer's thanks to the people who have helped him in conducting the present research.

2.2 Methods of Writing Technical Research Paper/Article & Scientific Article

No research is ever possible without the use of some formal methods. The area of research determines the types of the methods, used by the researcher. Today's technological era has brought forth various modern methods to facilitate the research procedure⁷. First of all, the library and laboratory help in the collection of data. Electronic media may also be of great help. Today much authentic material is available on line which provides useful information at the stage of data collection and also at analyzing data and deriving conclusion. Besides, interviews, discussions with technocrats and questionnaires⁸ can also be useful for writing technical articles and scientific articles.



Questions and Answers

Q.1. Write a note on 'source material' in technical research paper writings.

Ans. Apart from the linguistic point of view, the nature and quality of the source material must be closely examined by the writer. He should be able to make a clear distinction between the original source