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An Appraisal on Common Errors/Mistakes in Scientific Writing

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Abstract:

In scientific writing, it is important to pay particular attention to the structure, style, and presentation of your reports. There are a lot of errors in scientific papers being published. The purpose of this report is to identify errors which are found in scientific reports and ways to avoid them. It also explains what should be contained in different sections of a report.

1. Introduction

A scientific report may be defined as a written document which present the results or findings of an experiment (field observation) in a coherent and logical mind. One of the most important things scientist or researcher do is publish their work. Publishing your work in a scientific journal is a requirement toward earning a graduate degree at some institutions. Beyond graduation, getting published is necessary for a career in academia and, increasingly, in industry as well. Some of the skills required for research are also required for writing a scientific paper, for example, planning, organization and attentiveness, but for sure writing a paper also requires many additional skills (Shubham, 2014).

Many scientific reports contain some frequent errors despite the fact that each publishing organization have their guide to writing scientific reports. Authors tend to pay less attention on details which they should be taken care of before sending the paper for publication. Although every manuscript has unique questions and findings, and editors seek specific opportunities for improvement, common issues are often encountered in research manuscripts related to all fields. Some identified errors in scientific reports have been grouped into three types of error; phonological, content errors, and other types of error.

The aim of this study is to identify some common errors in scientific writing and how this errors can be eliminated when writing.

2. Identification of Common Errors/ Mistakes in Scientific Writing

Sections in scientific writing	Common errors/mistakes
Title	Unsuitable title Very long titles Use of waste words
Abstract	Use of abbreviations and acronyms Repetition of the title Too much details on method used
Introduction	Insufficient information on the background of study Use of abbreviations Discussion of unrelated topics
Materials and methods	Use of trade names of reagents Inadequate information on the description and sources of sample Bad order of presentation of methods Lack of reference citation of already published method Inappropriate use of headings and sub-headings Use of imprecise measurements
Result	Unclear tables and graphs Redundancy in presentation of results Inconsistency of significant figures and decimal places

Discussion	Unrelated discussions to the result Citation of results which are in common to your results alone Missing comparison of results with the literature result
Reference	Inappropriate arrangement of citations Use of two different styles of citation
Other are;	
Phonological error	Wrong grammar and spelling Inaccurate word or phrase Spelling inconsistency Undefined abbreviations Incorrect verb tense Use of contractions Missing and wrong punctuations
Scientific context error	Out of order figure and table citation Uncited references Inconsistent formatting

Table 1: list of some errors found in scientific report

3. Steps in Writing a Scientific Report

The scientific report consists of different section; they are;

3.1. Title

The title should be short and descriptive of your research. The title of a research work is like a label and not a sentence. Readers make quick decisions as to whether they are going to invest the time to read your article largely based on the title. The title is used to locate your report so it should not contain jargons.

3.2. Abstract

The abstract provides the reader with the framework of the report (Rudner, 1999). It should present the basic results obtained by the author and presented in the report. It should be concise and clearly stated. It should describe the most important part of the study within the word limit stipulated by the journal. No references are cited here.

3.3. Introduction

This is a major component of writing scientific publications. It should establish the significance of the work. It should present with all possible clarity, the nature and scope of the problem investigation. It should reveal the pertinent or relevant literature to orientate the reader. It should state the principal result of findings of investigation. The goal of the introduction and literature review is to demonstrate "the logical continuity between previous and present work" (APA, 1994). Analyze the relationships among the related studies instead of presenting a series of seemingly unrelated abstracts or annotations. The reader should understand why the problem was researched and why the study represents a contribution to existing knowledge.

3.4. Materials and methods

This is the section where the samples, the materials and the procedures used are described. The source of the sample or how it was formed must be clearly stated, this is needed for replicability and understanding of the study. The equipments and materials used should be described exactly. The order of presentation of methods must be chronological. Ordinary statistical methods should be used without comment; advanced or unusual methods may require a literature citation. If the method used was is new, all the required details needed to repeat them must be provided.

3.5. Result

The result section of a scientific paper is the most important part. The summary of the findings from the study are presented in this section such as graphs and tables. It is often short particularly if it is preceded by a well written material and method section. Results should be short and sweet without verbiage. It is very necessary to avoid redundancy in the presentation of the result. If there are more than one important results, each one may be presented in separate sections. Poor presentation of results often reflects a lack of understanding of the purpose of tables and graphs. Their purpose is to visually present data that is too complex to describe in text (or too tedious to read). Whether to use a table or graph depends largely on the message you are trying to convey (Marc,2013). Pay attention to organization of results, some journals encourage condensation of Results and Discussion into one section. The most common mistake researchers make in the presentation of numerical data involves the number of significant figures and decimal places. Try limiting the number of digits after decimal to make number meaningful (Shubham,2014). The results comprise the new knowledge that you are contributing to the world. Hence, it is important that your findings be clearly and simply stated.

3.6. Discussion

The result of your findings is interpreted in this section. Relate your findings to those of previous studies and when discussing the meaning of your results in the context of current research, do not just cite those studies whose results support your own. Cite those authors whose studies yielded different results and suggest why that might be so. The principles, relationships and generalizations shown by the report should be presented.

3.7. Conclusion

This should consist of a brief revisit of the most important findings. The importance and significance of the findings with respect to implications and impact should be stated. It is also important to state what problem should be researched next. The limitations of the study and potential improvement.

3.8. Reference

This section is a required component of a scientific writing as giving proper credit to an originator of an idea is very proper. This should consist of the collation of all citations used in the text, this is usually done at the end of the work. The works cited should begin on a new page, not on the same page with the conclusion (Leah and Jefferson, 2009).

4. Phonological Errors

- Wrong grammar and spelling error: - Proofreading of the final work is very necessary, also, giving it out to a colleague to help proofread minimizes grammar and spelling errors. It is also very important to use the word processing program's spelling and grammar checking function to check for possible errors.
- Inaccurate word or phrase:-It is important to learn the differences between the various phrases that we have. A noun should not be used as an adjective, neither should a noun be used as an adverb. For example, the phrase "due to" can link only two nouns, it cannot be used as adverb.
- Spelling inconsistency: - It is important to be consistent in spellings. For instance, if you are targeting American journal then you should use American spelling of all words. If you are submitting your paper to British, Canadian, or European journal, you should use British spelling consistently.
- Undefined abbreviations: - Abbreviations need to be written out in full form when they are mentioned first time both in the abstract or in the main text. Abbreviations should be placed in parenthesis after the expanded term. Do not use an abbreviation in writing without first giving the full meaning.
- Incorrect verb tense: - Wrong use of verb tense can make the readers confused as to what facts are already known and what was newly discovered in the actual study that is the subject of the paper. As a rule, use past tense to describe events that have happened. Such events include procedures that you have conducted and results that you observed. Use present tense to describe generally accepted facts.
- Use of contractions: -Complete phrases should be used instead of contractions when writing a scientific report.
- Missing and wrong punctuations: -Proper attention should be paid to punctuation marks in the text and most especially in the reference list.

5. Scientific Context Errors

- Out of order figure and table citation: - All the figures and tables present in the report must be cited in the main text in numerical order i.e. Table 1 should be cited in the text before Table 2.
- Uncited references: - Whenever a previous study is described, it is also very important to cite the appropriate reference to that study. In other words, all previous studies used, there must be a reference citation.
- Inconsistent formatting:-It is also very important to use the same paragraph spacing, font size, heading and sub-heading capitalization.

6. Conclusion

There is need for Authors to improve on scientific writing. Authors should not rush to submit their report for publishing. Enough time should be dedicated to check for errors which may be present in the report. Authors should endeavour to give their writings to their colleagues for proofreading. This will minimize several errors found in scientific writing today. Developing good technical writing skills can only improve your career status.

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