

Scientific or Technical Report Writing

A very important phase of the research of a scientist is the effective reporting of the research project attempted and completed. The technical report is different from other kinds of informative writing in that it has a single, predetermined purpose: to investigate an assigned subject for particular reasons. Technical reporting is done in the passive voice. Use of personal pronouns should be avoided except in rare instances. The telling portion of the research job is often underrated. Thus, communication is a very necessary part of research work. Any breakdown in communication means that the report has failed. The following functional analysis of the parts of the report is suggested for use to aid in organizing and presenting the results of scientific and experimental efforts.

Each report must bear an OFFICIAL COVER SHEET, which may be obtained in advance using a link found in the NEXT MEETING page of TJAS.

I. Introduction

- A. Purpose of the investigation (why the work was done)
- B. How the problem expands/clarifies knowledge in the general field
- C. Review of related literature

II. Experimental procedure (how the work was done)

- A. Brief discussion of experimental apparatus involved
- B. Description of the procedure used in making the pertinent observations and obtaining data

III. Data (what the results were)

- A. Presentation of specific numerical data in tabulated or graphic form
- B. Observations made and recorded
- C. Any and all pertinent observations that bear on the answer to the problem being investigated

IV. Conclusions (final contributions to knowledge)

- A. General contributions the investigations have made to the answer to the problem
- B. Further investigation suggested or indicated by the work

V. References—should be the Works CITED Only (the literature sources that are Actually Cited in the paper)

- A. Items arranged alphabetically by author's surname
- B. References presented in this order:
 - 1. Author (surname, with initials only)
 - 2. Date of year (in parentheses)
 - 3. Title; capitalize first word only
 - 4. Source: (periodical) NO ABBREVIATIONS) (book) city, state of publication, publisher

Example—Book:

Nebel, B. J. (1999). Environmental science. Englewood Cliffs, NJ: Prentice Hall.

Example—Periodical:

Bardeen, J. L. (2000). To a solid state. *Elementary Science Concepts*, 27(9): 14-15.

Each item in the Works Cited MUST ALSO BE CITED WITHIN THE TEXT of the student paper, using the parenthetical format of the APA Style Manual. Plagiarism is a serious offense, and is not limited to direct quotations. Any word, thought, statement, or instruction written by another author and used in the student paper must be appropriately cited in the student paper presented to the Junior Academy.

Selection of the Report

Each report submitted must be endorsed by a local science or mathematics teacher. The teacher should approve the report as the first member of a selection committee. IT SHOULD BE APPROVED ONLY IF IT IS OF HIGH QUALITY AND REPRESENTS THE STUDENT'S OWN WORK IN RESEARCH AND PREPARATION. The science or math faculty submitting two or more papers in a given category will be asked to serve as judges for those papers and rate them in the order of 1, 2, 3, 4, etc., according to merit before submission to the Tennessee Junior Academy of Science for final judging. The report will then be read by a committee of two or more additional scientists in the field appropriate to the report. Reports will be selected on the basis of research design (30 points), creative ability (20 points), analysis of results (20 points), grammar and spelling (20 points), and general interest (10 points).

Preparation of the Report

The report should be an accurate presentation of a science or mathematics project completed by the student. It should be comprehensive yet avoid excessive verbosity. Maximum length should be 1500 words. The report and the project it describes must be original with the student, not just a review of another article. It should be obvious that experimentation and/or observations have been scientifically made. The paper should reflect credit on the writer and the school represented.

Visual aids such as slides, mock-ups, and charts may be used in presentation of the report. Illustrations within the report should be restricted to tables and/or simple line drawings. These must be done in black ink on 8 ½" x 11" paper. It is suggested that the total width of the illustration itself be not more than 7". Illustrations submitted with the paper MUST be originals, not copies, and they should be in black and white because the Handbook cannot be printed in color.

The report must be double-spaced on 8 ½" x 11" paper. Give careful attention to spelling and grammar. Prepare a COVER SHEET for the report, giving the required information as specified. The cover sheet included with this material may be duplicated as needed. Prepare an abstract to accompany your paper (not more than 100 words). No paper will be considered unless it is accompanied by an abstract.

Submission of the Report

The ORIGINAL COPY of the report should arrive on or before the date published in NEXT MEETING page of TJAS. The parts of each report should be stapled or clipped, not bound. Heavy covers increase the

cost of postage. The student should keep a copy of the report; the original cannot be returned. (We MUST have the ORIGINAL of all papers—and illustrations—for publication.)