

## A Guide for Analyzing a Laboratory Report

### **Introduction:**

*Does the writer...*

1. state at the beginning the learning context for the lab, that is, what scientific concept (theory, principle, procedure, etc.) is supposed to be learned by doing the lab;
2. provide pertinent information about the scientific concept (from the lab manual, the textbook, lecture notes, and other sources recommended by the lab manual or teacher; in more advanced labs the writer may also be expected to cite the findings of previous scientific studies related to the lab);
3. present the objective(s) for the experimental procedure (what is being done in the experiment, such as to measure something, to test something, to determine something, etc.);
4. define the purpose of the lab (the way the experimental procedure is linked to the learning context);
5. state the hypothesis for the outcomes of lab procedure;
6. explain the scientific reasoning that leads to that hypothesis?

### **Materials and Methods:**

*Does the writer...*

1. provide a step-by-step description of the laboratory procedure the experimenters followed;
2. give enough details so that a competent researcher in the field could replicate the procedure;
3. successfully avoid giving details that a competent researcher in the field would already know;
4. follow the formatting specified for this course?

### **Results:**

*Does the writer...*

1. begin with a succinct statement (a sentence or two) summarizing the overall findings of the experiment;
2. present visuals (graphs, tables, drawings) that allow the reader to understand the "story" of the data;
3. present clear verbal findings of the data (in words) that summarize or give the main point of each visual and then provide any other pertinent details about the visual;
4. effectively integrate the visual and the verbal (with proper references to the visuals within the verbal part of the Results)?

### **Discussion:**

*Does the writer...*

1. begin with a statement as to whether the findings in the Results support or do not support the expected findings stated in the hypothesis;
2. effectively explain the relationship between the hypothesis and the findings;
3. address comparisons to other research and explain those comparisons;

4. present a full and detailed discussion of the outcomes of the procedure, a discussion that answers the questions that an intelligent scientific reader would ask about the experiment?

**Conclusion:**

*Does the writer...*

1. explicitly state what the researcher learned by doing the experimental procedure;
2. provide enough details that the reader is convinced of what the researcher learned and the value of the lab experience?

**Abstract:**

*Does the writer...*

1. summarize each part of the report in the abstract;
2. provide a good sense of the overall report;
3. summarize the report within the required number of words?