

# LECTURE NOTES ON EMT 417:

## SCIENTIFIC WRITING AND PRESENTATION IN ENVIRONMENTAL SCIENCE

BY  
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**a) Definition:**

Scientific writing is an act of documentation in written from the result of scientific findings in any field of interest. It could be in form of students (B.Sc., M.Sc. Ph.D) projects, conference, and technical report.

While scientific presentation is the discussion of the result of ones findings in any area of research. The presentation may be either oral form or in poster form.

1. Oral Presentation – is the act of discussing the results of oral finding to a set of audience who also have idea of one’s area of research. Oral presentation involves the use of Power Points and verbal expression

In oral presentation, knowledge of the subject matter is important.

2. Poster presentation – is the act of display the results of one’s finding on a bill board for any interested audience to read and probably ask questions.

**b) What type of question should the presentation answer?**

Question to be answered by scientific presentation.

- What is this presentation all about? i.e. the theme of the presentation include:
- What is the contribution of my topic to the theme? e. g. Environmental sustainability in Nigeria, challenges and opportunities.
- What is the type of audience I’m going to speak to?
- What is the level of awareness of my audience concerning the topic I’m speaking about?

**Purpose of Presentation**

**a) Informative**

1. The presentation must be informative. It has to be brief and to the point.

Facts should be presented, avoiding complicated information.

Presentation of information should be by the use of the followings viz:-

Present the information using either;

- i. logical
- ii. temporal
- iii. geographical
- iv. cause and effect structure

2. Instructional - The presentation must make a contribution to the knowledge of the audience.

3. Arousing - The presentation should make people think about a problem and solution. (subject matter). Arousing presentation uses vivid language and visuals. It is often emotional and manipulative.

4. Persuasive – A persuasive presentation attempts to convince the audience to accept your proposal or make a controversy.

### **Types of Presentation:**

- Structured presentation
- Impromptu presentation
- Power points presentation.

It is necessary to note that the slide in Power point is not necessarily for the presenter but for the audience.

Tips for power point presentation

- Master the topic very well.
- The title should be as short as possible.
- It should be catching and exciting to the audience.
- The font size for the title should not be less than 20.
- The colour should be mixed correctly

1) **Slide 1** should contain Title of work done, Matric No, Department, name and name of school for the student while it must contains the names and place of work for the lecturer.

- Pictures can be used to illustrate points.

2) **Introduction - slide 3**

- The slide must not be crowded.

- Points should be separated with bullets (\*, -).
- The introduction might not end on one slide. If it enters the second slide, it can be written as intro continued.
- The introduction should not be too boring.
- Pictures can be used in the introduction.
- Citing of references is permitted in the introduction

### 3) **Literature Review:**

- This can be written together with the introduction unless there is need for separating them.
- It should be highlight of the result of previous works done in this area of research,

### 4) **Materials and Method**

- This should contain the procedure on how the project was carried out. e.g.
  - Assessment of level of (any) metal in the blood of (any) female/male subject
  - Study population – control population, test population.
  - Blood sample collection – How it was collected.
  - Determining of pH in blood.
  - Statistical analysis – the type of analysis carried out.
- Result – Findings of the experiment, presented in tables or graphs.
- Discussion of the results explanation, comparison and inference Conclusion – Exploration interpretation of results.
- Recommendation – should be based on outcome of one's finding.
- References can be cited in the introduction, literature review, result, discussion and conclusion (if possible) should not be cited in abstract, conclusion and recommendation.
- Thank you Slide – very important. It shows that you hold your audience in high esteem.

## **VARIOUS COMPONENTS OF SCIENTIFIC WRITING**

**ABSTRACT:** Abstract is a summary of what the project work entails. There are different ways of writing an abstract.

- Structured abstract
- Graphical abstract.
- Conventional or normal abstract.

(i) Structural Abstract: This is characterized with the following components;

- Purpose/Aim
- Design/Methodology/Approach
- Finding/Results
- Research limitation/implication
- Practical implication.
- Originality/value

(ii) Graphical Abstract: This consist of a structural representation of the research e.g. Graphs, chemical structure, spectrum which describes the findings. This is followed by 2-3 sentences. Graphical abstract should be titled.

(iii) Conventional or Normal Abstract: This can be in the form of one paragraph abstract or can be made up of more than one paragraph (up to 4).

- One Paragraph Abstract: This is expected to have an introductory statement which should not exceed two lines and then methodology (summary of materials and method and statistics applied, results, conclusion and possible recommendation (500 word counts).
- More than one paragraph Abstract: In this case, more liberty is given to use more than 2 lines on the introduction. Methodology, Result, Conclusion and Recommendation.
- Extended Abstract – In this case, the abstract is up to maximum of two page. It contains short abstract, introduction, methodology, results, conclusion, recommendation and reference.

#### **CHAPTER ONE - Introduction:**

Introduction should give the background to the study and should explain why the work is being carried out. This can be referred to as Research Justification, Research rationale and problem statement. It must also contain:

- Scope of research
- Research objective – This can be subdivided into broad objective or specific objectives.

#### **CHAPTER TWO - Literature Review**

This basically enables a scientist to gather more detailed information on the following:

1. Subject matter
2. Previous work done and result obtained

3. Methodology used by previous researcher.
4. Facilities employed in the work and any other related topic.
5. Challenges faced and precaution taken.

### **CHAPTER THREE - Materials and Method**

Materials and method should give essential details of the work done including experimental design and statistical analysis. The method employed in the work should be reported in past tense and in the third person usage unless specified.

- Study location
- Study population
- Test group
- Control group
- Questionnaire

Note that results must not reflect in materials and methods. Finally, the statistical analysis must be specified and the reasons given.

Identify the statistical package. Data were subjected to statistical analysis via Pearson correlation to identified variations.

### **CHAPTER FOUR – Results**

This is the findings from the work done. The findings can be presented in different formats.

- Tables
- Bar charts
- Histogram
- Pie charts
- Line graphs and any other formats.

Each table or figure must have an explanatory note, which should be short. It is important to write briefly on the results.

This chapter can be segmented – A table or figure must be on a separate page unless specified. Table or figure should come immediately after citation.

### **CHAPTER FIVE – Discussion/Conclusion/Recommendation**

**Discussion** - This should not repeat the result. It should rather interpret the results, relating them to previous work done and compare it to a given standard or permissible level or threshold.

**Conclusion** – Should be based strictly on the outcome of one’s research and not the work of other people.

**Recommendation** - Must be related to the findings of the work carried out. It can suggest further studies or a solution to the problem.

## **REFERENCES**

This is written in two forms;

- text citation
- list of references

Text citation – Reference cited within the write up (no initials).

At the beginning of the sentence –

Godwin (2011) reported ... or

Godwin and Omolaja (2010)... or

Godwin *et al.* (2009)...

Within the sentence or at the end of the sentence -

Lagos is ... (Edwin, 2010) but Ibadan is...

Lagos is ... (Edwin, 2010; Omolaja *et al.*, 2008) but Ibadan is...

Lagos is ... (Edwin, 2010; Mabel and Edwin, 2007) but Ibadan is...

### **List of references –**

The surname and all the initials of the author should be reflected.

It should be listed alphabetically, journal article e.g. name (surname, initials) –

Adekunle, I.M. (2006) Article title, journal name 20: (2) 70-85.

Year of publication, article title in inverted commas, journal name or title underlined or italicized, volume number (issue number) and page (70-75).

Text book

Name, year, title, editor, publisher’s name, place of publication and page. e.g.

Gbadebo, A. M. (2007): Basic Principles in Environmental Geosciences. Elsevier pub. NY 109p.