Method of Scientific texts analysis

Advice typically centers around two main tips: read actively and read often. However, active reading, or reading with an intent to understand, is both a learned skill and a level of effort.

Step 01: Fix the goal and aim of reading the scientific text

The purpose of reading an article will influence your approach of reading it, basing on the goal of reading the text you might line up (prioritize) different sections of the same paper.

For example, if you are reading an article to learn about a new topic, you might focus on the introduction and conclusion sections. Despite, if you are reading an article to find information for a research paper, you might focus on the methods and results sections.

❖ **General intentions and goals of reading a scientific text**

a- **Learn about new topic :**

If you are new to a topic, it is important to read the **introduction and conclusion** sections carefully. The introduction will provide you **with background information** and the conclusion will summarize the **main findings** of the article. You may also want to read the methods and results sections to get a better understanding of how the study was conducted and what was found.

b- **Enter a new field :**

If you are entering a new field, it is important to focus on the beginning and end of articles. The introduction will provide you with an overview of the field and the conclusion will discuss the future directions of research.

c- **Evaluate the authors arguments (reviewer):**

If you are reviewing or evaluating an article, it is important to read the entire work carefully and critically. You should focus on evaluating the quality of the work and the data, as well as the author's interpretations. You should also consider whether the article is presented in a logical way and whether the author(s) have appropriately addressed any controversial topics**.**

d- Stay informed about current events :

If you are reading news articles to stay informed about current events, it is important to focus on the conclusion and introduction sections.

It depends on your time managements sections can be prioritizes as the following statements,

- **Read the conclusion and introduction first**. This will give you a quick overview of the event and its significance.
- **Read the body of the article if you have time.** This will give you more detailed information about the event.
- **Pay attention to the sources cited in the article.** This can help you to assess the credibility of the information.
- **Be critical of the information presented in the article.** Consider the author's perspective and any potential biases.
- **Read from a variety of sources to get a well-rounded view of the event.**

It is also important to be aware of the following when reading news articles:

- **News articles can be biased.** The author's perspective and any potential biases may influence the way the event is reported.
- **News articles may not be complete.** News outlets may only report on certain aspects of an event or may omit important information.
- **News articles can be sensationalized.** News outlets may exaggerate the importance of an event or use inflammatory language to attract readers.

By being critical of the information presented in news articles and reading from a variety of sources, you can stay informed about current events in a way that is both comprehensive and balanced.

Step 02: Unveiling the Author's Purpose.

- **The reader and author are equally important in scientific communication.**
  Understanding the author's goal helps you interpret the data and their interpretation of the data. This requires understanding the author's scientific interests, field of work, and how the paper fits into their research.

- **Define the type of the article.** Different article types have different formatting requirements and expectations for content. This will help you evaluate the information presented.
- **Knowing the author's goal and article type will help you understand the author's goal.**

Step 03: Six key questions to ask.

These are the key questions to ask during reading a paper , all this questions has to be asked for each section of the paper, introduction, methods, figure and tables, discussion and conclusion;

1. What do the author(s) want to know (motivation)?
2. What did they do (approach/methods)?
3. Why was it done that way (context within the field)?
4. What do the results show (figures and data tables)?
5. How did the author(s) interpret the results (interpretation/discussion)?
6. What should be done next?

Step 04: reading and interpreting figures and tables of the paper

Figures and tables are the most important parts of a scientific research paper, as they contain the data that supports the authors' claims. They represent the Heart of a Scientific Research Paper.

To elucidate and unpack each figure and tables, main questions has to be treated:

1. What do the x- and y-axes represent?
2. What statistical approach was used, if any?
3. Why was this particular plotting (graphs) approach used?
4. What experimental groups and variables are presented in the table?
5. How were the data collected?

Step 05: Understanding the Intent of Each Section in a Scientific Research Paper

- It consist of defining the goal and the specific issue of each section.