General guidelines to keep in mind when preparing (or writing) a review

1. Outline

Determine the Specific Area to Review in Connection with Your Research:

・Define and Construct the Scope of the Review Clearly.

(i) Consider the content:

- Introductory remarks
- Historical background and research trends: The historical development of the topic such as epoch-making discoveries, key insights, and breakthroughs.

(ii) Organize the content:

- Arrange the content into sections or subsections, focusing on specific aspects, concepts, or themes. Explain why the topic or content chosen is important.

(iii) Summarize the key findings and insights, and suggest future directions (Conclusion).

2. Details

(1) Comprehensive Literature Search

- Start with highly evaluated recent research papers, secondhand citations from them, papers with a high number of citations, keyword searches, etc. Databases such as SciFinder, Web of Science, PubMed and AI are useful.
- Make sure to include recent and relevant articles associated with foundational studies. Cite references, directly relevant to your topic, in the appropriate sections or positions.
- Organize the research results introduced, chronologically, thematically, or methodologically, depending on what makes the most sense for your topic.
- Ask those who are well-versed in the research field.

(2) Analysis

- Highlight significant results (discoveries, methodologies, mechanisms based on solid theoretical consideration) and explain how they advance the field.
- Provide concise descriptions of results in primary studies, if relevant.
- Do not just summarize the literature; critically evaluate the findings etc. Discuss the strengths and weaknesses of different approaches, methods, and studies.
- Discuss the practical and theoretical implications of the findings etc.

・ Compare and contrast different studies or approaches when relevant.
・ Present major issues under debate in the field.

(3) Conclusion:

・ Provide a clear and concise conclusion that summarizes the main findings and their implications for the field.

(4) Points to consider as a review

A good review should be not just a summary of published works (the existing body of knowledge) but an integrated analysis that provides a new perspective on the topic.

・ Such a review leads the reader in new directions and raises thought-provoking questions that can guide future research efforts.

The audience can easily understand what your research is aiming at, if your review presented is well organized. This is one of the purposes of our Practical English Presentation II.

3. Additional and Tactical Considerations

(1) Audience and Clarity

・ Understand who your audience is and tailor the content accordingly (considering their level of expertise), making sure to define any specialized terms for those less familiar with the field.
・ Provide explanations if an unfamiliar word is absolutely necessary for the audience. Avoid unnecessary jargon.

(2) Figures and Schemes

・ Utilize visuals to explain complex chemical concepts, mechanisms or summarize data.
・ Use figures or tables to summarize information and highlight trends.
This can make complex information more accessible.
・ Keep in mind that the audience has limited time to grasp the points.
Examples:
(i) A table of numbers can be replaced by a graph.
(ii) A verbal expression of a mechanism can be replaced by schematic illustration.

4. Personal Feedback from Preparing or Writing a Review

Preparing a review is essential for researchers to write a thesis, scientific paper, etc., especially for writing “Introduction.” It provides personal feedback for researchers in several ways:

(i) Knowledge Consolidation: It forces you to review the literature comprehensively, deepening their understanding of the subject.

(ii) Critical Thinking: Evaluating the strengths and weaknesses of existing research sharpens your analytical skills or improves your own analysis and insights.

(iii) Research Direction: By identifying research gaps and evaluating the scientific values of those areas, you can better position your future research.

(iv) Writing Skills: The process improves your academic writing and ability to communicate complex ideas clearly.