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

1. Outline

Determine the specific area to be reviewed 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 regarded recent research papers, citations found within them (secondary references), papers with a high number of citations, and keyword-based searches. 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, using a balanced mix of primary research articles and recent review papers.
- Organize the research results either chronologically, thematically, or methodologically, depending on what makes the most sense for your topic.
- Consult researchers or colleagues who are well-versed in the 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; instead, critically evaluate the findings, methodologies, and theoretical frameworks. 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 aligns with one of the key objectives of the Practical English Presentation II course.

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.
- Avoid unnecessary jargon and provide explanations if the word is absolutely necessary.

(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.
- Consider that time for the audience to get the points is limited.
  Examples:
  (i) A table of numbers can be replaced by a graph.

(ii) A verbal explanation of a mechanism can be replaced by a 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 valuable 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 and enhances your ability to generate original 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.

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