Synthesizing Source Ideas for Your Research Paper

> **"Synthesis: the combining of the constituent elements of separate material or abstract entities into a single or unified entity; the process of combining objects or ideas into a complex whole."[1]***

Synthesis of your research findings involves much more than summarizing articles. **Summarizing is different from synthesizing.** In a summary, you recap key points from a single source and then repeat the process with the next source until finished. When synthesizing material across multiple sources, the objective is to **combine the ideas and information** from those sources and present the reader with your own analysis of the findings in each section of the paper. With more advanced academic writing, you need to demonstrate to the reader that you understand the research and can effectively integrate the supporting evidence with your interpretation of the material.

The goal of synthesis focuses on showing the reader how the evidence fits together to form solid conclusions. Synthesizing source material to write a paper means combining the ideas and findings across all sources to make a convincing argument backed by evidence. Effective synthesis of the source material centers on looking for key similarities and differences between the sources to show the reader where the research agrees and where it disagrees.

Steps of Synthesis

- Organize sources/notes.
- Outline the planned structure of the paper/writing assignment.
- Draft major paragraphs with clear and complete topic sentences.
- Proofread, revise, and edit. Repeat as needed.

Organize Sources/Notes

Before writing the preliminary draft, organize your notes to reveal the relationships between sources and the similarities and differences in the findings. Using such graphic organizer tools as a **summary table/grid** or a **synthesis matrix** can help with the visual organization of notes taken during the research phase. For example, to create a grid of common points made across the research, follow these steps as you read the source material:

1. Create a grid using source/author names and key topics to organize your notes.
2. Note key words, themes, or ideas that are repeated.
3. Highlight any contradictions in the information presented or disagreements in the primary conclusions.
4. Document in the summary grid the main research questions answered by the sources and how the findings answer those questions. Translate the answers into category headings that will become the headings for your outline.

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*Please note that this document and any footnoted or parenthetical reference entries of source material are not formatted according to a specific writing style. Citations, reference entries, or MS Word settings should not be duplicated for use in academic submissions. Refer to your discipline's particular writing style guidelines to comply with requirements.

[1] Dictionary.com, s.v. "synthesis," accessed February 8, 2023, https://www.dictionary.com/browse/synthesis

Note: As you critically read through your sources, capture any of the following in your notes:
- Do the authors agree on the major findings/conclusions or do any authors disagree?
- Do any of the authors elaborate or build upon the research of another author?
- Are any new questions posed or ideas raised on the topic by the researcher(s)?
- Should any additional sources be explored and added to your list from the references used in the research?

Outline

With most research papers, content guidelines will be provided in the assignment instructions for use in structuring your paper. Your note-taking steps outlined above can also be organized by those same content guidelines. When called upon to structure your own paper, creating an outline serves as the framework for the paper and guides you in organizing your source material within the major and minor topics covered in your writing. An outline often includes an introduction paragraph containing your thesis statement, two or more supporting main points, with at least two pieces of evidence (statistics, data, or source quotes) for each of those points, and a conclusion that sums up the main supporting points. Once your notes have been organized, developing an outline structures the paper based upon the similarities, differences, and conclusions drawn from the research. "Making an outline is often spoken of as a process of dividing a subject…[but] outlining is a process of synthesis, not division" (Kierzek & Gibson, 1977, p. 56). Structuring your synthesized material into what will become a cohesive paper requires that you organize your discussion points/arguments according to the content guidelines in your assignment instructions. If developing your own outline, you can organize your paper according to the appropriate framework for your findings based on the content guidelines given in the instructions. The material may then be organized as follows:

- chronologically
- theoretically (when contrasting different viewpoints)
- thematically (when reviewing various themes or topics)
- by the research methods used to document the findings in the source material

Draft Major Paragraphs with Clear and Complete Topic Sentences

A paragraph's topic sentence condenses the overall point of a paragraph into a single opening sentence. The supporting sentences that follow in the paragraph serve to further explain, support, and reinforce the topic sentence. (See Writing Aid on Paragraph Construction.) The key to synthesizing is to distill and paraphrase the most relevant information from your sources, providing the reader a clear overview of the supporting evidence needed to support the paper's thesis statement. (See Writing Aid on Effective Paraphrasing.)

Proofread, Revise, and Edit

As with any academic writing, synthesizing research material from your sources also entails stages in the process that include proofreading, revising, and editing your notes, outlines, and major paragraphs. In the examples that follow, the two paragraphs illustrate the difference between summarizing source material versus synthesizing the findings. In the unsynthesized paragraph, notice the lack of integration of source material, with each study

summarized separately in a linear format in the paragraph. The second paragraph uses the skill of synthesis to combine the ideas and information from the sources in such a way as to show the reader how the evidence fits together to arrive at a similar conclusion.

Examples

Unsynthesized Paragraph

(*Note:* Citations are for illustration purposes only and do not represent actual sources.)

Patterson (2019) examined reading comprehension test results and writing samples from doctoral students who were within one year of completing their dissertations. She studied two test groups that consisted of 17 females in the first group and 18 males in the second. According to Patterson, higher average test scores in both groups correlated with more advanced levels of academic writing in the samples. However, results indicated that males were performing at lower levels of academic writing than females. Anderson (2020) also studied doctoral students at the same point in their degree programs. He looked at expanded groups of 51 females and 49 males and found that males were demonstrating slightly lower levels of academic writing than the females, though the reading comprehension scores in both groups were similar. Findings suggest that the females had a greater likelihood of completing their dissertations on schedule as compared with males. Rosen et al. (2022) studied two groups of doctoral students, segmented by gender, who were all foreign exchange students. Among the sample of 23 females, all were writing at levels that significantly exceeded their male counterparts in the foreign exchange program.

Synthesized Paragraph

Recent studies of doctoral students, who were within one year of completing their dissertation, reveal similar findings regarding relationships between reading comprehension test results and writing abilities at the doctoral level. While Patterson (2019) and Anderson (2020) both found that females were demonstrating slightly higher levels of academic writing than males, Rosen et al. (2022) focused solely on populations of foreign exchange students, though similar gender-specific performance results were observed in writing levels. Although Anderson expanded on Patterson's original study with larger samples in both groups, both researchers concurred that females had a greater likelihood of completing their dissertations on schedule as compared with males.

References

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