

Writing an Article Summary

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Planning your work

Read this document to determine your goal and requirements. In this course we have several goals:

- Get accustomed to research articles and their standard organization.
- Understand the topic the article discusses.
- Finding the important points in the article.
- Practice on clear and concise writing.
- Discuss, criticize, and assess the article in a larger perspective, based on what we already learned in the course, and compare to the technical development since the article was new.

All parts are of importance when you will write your final thesis, and this course is one of several to prepare you specifically for that.

The goal is not to simply rewrite the article into a shorter form. The goal is to understand the most important aspects of the topic discussed and write a condensed version of that. To achieve this you can not just simply read it, you have to think about what portions are the most important in the article. You may also have to read some background material (chapters in the course book, or cited articles) to properly understand some parts.

This exercise will also help you to get familiar with the structure of research articles. They use a standard format to clearly communicate information about the research or experiment, just as you will in your final thesis. This is the usual breakdown:

- Title: Important keywords to catch your interest
- Abstract: Key topic and findings
- Introduction: Why the work is important
- Method: How the work was done
- Results: Objective results and findings
- Discussion: More subjective discussion and interpretation of results
- References: List of articles cited

Of course you will find variations with sections such as “Background” or “Related work”, and sometimes a combined “Results and Discussion” section, but a good article will always have all sections represented in some way or another.

Reading the research article

Allow enough time. Before you can write about the research, you have to understand it. This will take longer than most people realize. Only when you can clearly explain the study in your own words to someone who hasn't read the article are you ready to write about it.

Scan the article first. If you try to read a new article from start to finish, you'll get bogged down in detail. Instead, use your knowledge of standard article format to find the main points. Briefly look at each section to identify:

- The research question and reason for the study (stated in the Introduction).
- The hypotheses tested or experiment performed (Introduction).
- How the hypothesis was tested or experiment performed (Method).
- The findings (Results, including tables and figures).
- How the findings were interpreted (Discussion).

Underline key sentences or write the key point (e.g., hypothesis, design) of each paragraph in the margin. Although the abstract can help you to identify the main points, you cannot rely on it exclusively, because it contains very condensed information. Remember to focus on the parts of the article that are most relevant.

After you have highlighted the main points, read each section several times. Read for depth, read interactively. As you read, ask yourself these questions:

- Why was this research done? Will the study contribute to something important?
- How does the design of the study address the research questions?
- How convincing are the results? Are any of the results surprising?
- What does this study contribute toward answering the original question?
- What aspects of the original question remain unanswered?

If you have sufficient background knowledge small “what if” questions may pop up while you read. Write them down in the margin. They may be answered later and then you can cross them out, but if not (or anyway?) they may prove good discussion questions.

Preparing the summary

A summary is a condensed version of a larger reading. Condensed as in (GOOD:) “convey the authors main thoughts in brief but clear form” rather than as in (BAD:) “rewrite his text with some parts removed and some words changed”.

A summary should be short, clear and concise. It focuses on the important points of the original work. The better you understand a subject, the easier it is to find the relevant parts. The summary should be written with your own words to express briefly the main idea and relevant details of the piece you have read. Use your own words to express in shorter form the idea the original author tried to convey.

This is of course delicate work, because you are balancing the edge of plagiarism. To help yourself avoid it take brief notes in your own words on a separate sheet of paper. Look only at your notes when writing the summary. This forces you to formulate your own sentences rather than using the formulation in the article.

Write a first draft. As a first step to collect your thoughts, start by writing down the most important parts of the article. Include the information in the same order as in the article itself. You might find that you need to restructure the information while writing the summary later.

- State the research question and explain why it is (was) interesting.
- State the hypotheses tested.
- Briefly describe the methods (design, participants, materials, procedure, what was manipulated [independent variables], what was measured [dependent variables], how data were analyzed.
- Describe the results.
- Explain the key implications of the results. Avoid overstating the importance of the findings.
- The results, and the interpretation of the results, should relate directly to the hypothesis.

For the first draft, focus on content, not length (it will probably be too long). Condense and restructure later as needed. Try writing about the hypotheses, methods and results first, and about the introduction and discussion last. If you have trouble on one section, leave it for a while and try another.

If you find yourself sticking closely to the original language and making only minor changes to the wording: you are plagiarizing. Either you are trying to stick too closely to the original structure, or you don't understand the study well enough. Since the summary is much shorter than the original, you probably need to simplify and/or change the structure in the article to make it fit into your summary. To help with understanding and structure, find two friends that read the article. Explain the article to one of them for ten minutes or so, and let him/her ask you questions to clarify your point. Your second friend just listen. Then let your second friend fill in details she/he think both of you missed. Try to pinpoint what you are unsure about.

Finally, you may need to start over by reading more background material and re-read some section(s) of the article with the new information in mind.

Discussion questions and own thoughts

The actual summary should convey the original authors ideas through your wording, not what you think of the topic. What you think about the work should be summarized and motivated in a final section of your own. Do you think the results were (are) significant?

In that section you should also add three questions you think interesting to discuss regarding the topic. They should be open ended questions that probably have several possible answers. “What if ...” could be one possible starting point.

Writing the actual summary

Like an abstract in a published research article, the purpose of an article summary is to give the reader a brief overview of the study.

In your reading, preparation and first draft you identified the most important information. Now you need to condense that information for your reader. The better you understand a subject, the easier it is to explain it thoroughly but briefly.

Edit your draft for completeness and accuracy. Note that you will not be able to capture all ideas in full detail, so you need to focus on the important ideas. Then add information to make your description of these ideas complete where necessary. You might have to re-structure parts of the presentation to fit the shorter format. More commonly, if you understand the article, you will need to cut redundant or less important information.

Stay focused on the research question, be concise, and avoid generalities. Edit for style. Write to an intelligent, interested, naive, and slightly lazy audience. Expect your readers to be interested, but don't make them struggle to understand you. Include important details; don't assume that they are already understood.

- Use a simple text format. Use several sections to give your summary a good structure. Do not hesitate to give titles to your sections: as in contribution, method, experiments, results, etc. Note that the titles do not have to match titles in the article. Since your summary is shorter than the article, it is usually a good idea to structure some parts differently.
- Eliminate wordiness, including most adverbs (“very”, “clearly”). “The results clearly showed that there was no difference between the groups” can be shortened to “There was no significant difference between the groups”.
- Use specific, concrete language. Use precise language and cite specific examples to support assertions. Avoid vague references (e.g. “this illustrates” should be “this result illustrates”).
- Use scientifically accurate language. For example, you cannot “prove” hypotheses (especially with just one study). You “support” or “fail to find support for” them.
- Rely primarily on paraphrasing, not direct quotes. Direct quotes are seldom used in scientific writing. Instead, paraphrase what you have read. To give due credit for information that you paraphrase, cite the author's last name and the year of the study (Smith, 1982).
- Re-read what you have written. Ask others to read it to catch things that you have missed.

- Finish with a section where you state your own thoughts about the work, coupled with three discussion questions (see section above). This should be at most 250 words.
- Use references and citations in a proper format (the library¹ has a good overview, pick for example the IEEE or Harvard style). You need to cite the summarized article at least once. It is, however, not necessary to add citations to every paragraph. That makes the summary difficult to read. Instead, remind the reader that the ideas you present are not your own by phrasing the text like “The authors propose X”, “The authors then conclude that...”, etc.
- Your final summary should be 1200–1500 words, excluding the “discussion questions and own thoughts” mentioned above. This is about two pages in two-column format.

Evaluation and discussion seminar

You should bring a printout of your summary to the seminar. This acts as a ticket, **without it you will not be admitted**.

During the first half of the seminar you will swap summary with a friend and evaluate their summary according to the criteria below. The list below is numbered so you can easily reference a point in the comments you write to your peer:

1. Do you think the summary catches the most important ideas of the article?
2. Is the research question, motivation, method and result accurately captured and clear in the summary?
3. Can you find unclear citations (not relying information from the cited author) or not correctly presented in the reference list? Is the summarized article properly cited?
4. Does some section lack sequence or is difficult to comprehend?
5. Can you make the language more clear and concise anywhere?
6. What language and spelling mistakes can you find?
7. Can you find any section you suspect is not properly paraphrased?

¹<https://liu.se/artikel/citeringsteknik>