



# Effectively Summarizing with Gen AI

Students read a lot of texts, many of which are dense. Summarizing texts can be an effective tool, especially when it comes to the research process. This handout is designed to help students use Gen AI to streamline readings.

## Check First

When using AI to summarize content, there are a few things to consider:

- Before you use AI to help you complete an assignment, you must have explicit permission from your instructor to do so.
- If you are using AI to collect and analyze data from research participants, they will need to provide **informed consent**. This means that participants must have an understanding of how Gen AI works before you can ethically use this data.
- AI can make mistakes. You need a robust validation process to ensure accuracy.

Additionally, you should note that if you ask AI to summarize without attaching a file, the AI tool will likely be forced to rely only on limited online information or training data. If possible, attach the file you want summarized. Otherwise, AI can completely fabricate the rest. For instance, providing a link to an article will not necessarily mean AI will be able to access the full article.

However, do be mindful of privacy, copyright, and intellectual property considerations before uploading files.

## Before Prompting

Before you use AI, take a moment to think about what you need. What are your goals? What do you need support with? Here are a few examples of situations you may use AI to help summarize:

- You understand a concept but need clarification to deepen your understanding.
- You want data to help you validate sources, including searching for supporting research and counterarguments.
- You are filtering through several sources and want help narrowing down the list.
- You conducted a large survey and want a general picture of what people are saying.

It is also useful to know exactly what you want to go over. Do you just want a quick overview or something more specific? What do you want to investigate? Examples include:

- Research objectives
- Main claims
- Key takeaways
- Methodology
- Variables
- Key terms and definitions
- Results
- Discussion
- Statistical significance
- Overall significance
- Further implications

When crafting your prompt, make sure to provide context and background information to yield more relevant outputs.

## Two Types of Summaries

### Abstractive summary

Abstractive summaries involve synthesizing information from multiple pages and then condensing that information into a simple overview. By default, AI tools usually output abstractive summaries unless you request otherwise.

Abstractive summaries are more likely to lead to misinterpreting or misrepresenting information, so make sure to check these summaries for inaccuracies.

#### Prompt example:

“Provide a thorough summary of this article that includes the research objective, analytical strategy, methodology, and discussion. Then, list the variables, the key findings, and the conclusions.”

#### Prompt example to summarize large data pool:

“I attached a spreadsheet containing responses to a survey. Summarize the consensus. If applicable, point out the outliers and unique inputs.”

#### Prompt example to give an overview of multiple possible sources:

“Provide an overview of the review articles that discuss this topic. Include the citation and link to the original article for each source.”

## **Extractive Summary**

Extractive summaries are overviews that do not involve paraphrasing. This means that the AI tool is using only the original text, not generating new ones.

Even when extractive summaries use only the original text, the AI tool can miss important points in the original source or remove important context, so you still need to review the original source to develop a thorough understanding.

### **Extractive summary prompt example:**

“Provide a bulleted list that identifies: 1) the research objective, 2) methodology, 3) key findings. Rely only on the provided text. Do not include external information, and do not paraphrase.”

## **Why Summarize?**

AI summaries cannot replace the benefits of summarizing content yourself. It is always best to review the content yourself. This promotes your own knowledge and ensures that algorithms do not fabricate information or suppress important points.

Still, quick summaries can be helpful when dealing with a large number of sources, especially in bigger projects. These AI-generated overviews can help you:

- Evaluate the source’s relevance
- Collect supporting or contrasting data
- Reinforce your own understanding

## **Pair Summaries with Your Own Insights**

The most effective way to evaluate relevance is to compare AI’s summary with your own notes. Briefly look at the source’s abstract, if available, and quickly skim the content for any relevant information. If you have more time, read the article thoroughly to develop a strong understanding of the content.

You can contrast your findings with AI’s overview to mitigate AI’s inaccuracies while potentially pointing you to elements you might have missed. Use the information you gather during this process to determine whether a source should be included in your own project.

## Checklist to Review AI Output

Even when using AI to help summarize, it is still advisable to validate AI outputs to ensure accuracy. Here is a list of questions you may want to ask yourself before accepting an output.

- Did the AI do what you were asking?
- Are the summaries accurate and logical?
- Is the response relying on only on training data? Is it relying on the web? Have you uploaded the material to summarize?
- If the AI tool is relying on training or web data, is this data up-to-date?
- Does the output have working links? Have you checked these links?
- Is the data biased? If it is, have you taken steps to mitigate bias?
- Is the output (or input) still missing any important aspects?
- Did you revise the outputs based on your own insights?

## Conclusion

AI promises speed and efficiency with generated summaries, but these summaries can miss context, nuance, and important points. When you must correct and revise ineffective summaries, you may actually prolong the research process. If you use AI to help throughout the research process, building your prompting skills and knowing how to mitigate inaccuracies can help you maintain a robust and efficient research process.

Although AI can provide you with a good starting point, depth and personal development come from your own critical thinking and sustained effort. Delegating reading, thinking, and writing to AI tools compromises academic integrity and is detrimental to your own development. When using AI, it is always important to keep your own thoughts and understanding central.