

## Writing a Literature Review (From Journal of Young Investigators)

### What is a Literature Review?

A literature review addresses a specific topic by evaluating research that **others** have done on it. As an author, you will weave your review article around a certain thesis or problem you wish to address, evaluate the quality and the meaning of the studies done before, and arrives at a conclusion about the problem based on the studies evaluated.

**A literature review is not a summary**, and it is not a list. The author cannot simply cite the studies that have been done and the results that have been obtained. If you describe past research without evaluating it, then your “review” is little more than a book report. A literature review must be a **synthesis** of the results of your search, organized around your chosen theme. The article should be your **evaluation** of the literature and of the issue at stake. This is a challenging piece of work.

You must:

1. Organize information and relate it to your thesis or research question
2. Synthesize results into a summary of what is and isn't known
3. Identify contradictions, inconsistencies, and gaps in the research
4. Identify and analyze controversy when it appears in the literature
5. Develop questions for further research
6. Draw conclusions based on your evaluation of the studies presented

### Literature Review vs. Research Article

A literature review surveys research done by others in a particular area. You will read and evaluate studies done by others, instead of conducting a new study yourself.

Research articles, on the other hand, present research that you have conducted yourself. A research article should contain enough background information and literature evaluation to shed light on the your study, but the ultimate purpose of the paper is to report research done by you.

### Writing a Literature Review: Preliminary Research

Writing a literature review starts weeks to months before you ever begin the article. Before writing, you must:

1. **Select a topic.** This can be challenging. Unless you are already very well read in your area, you probably will not be able to just dream up a topic that is both interesting and narrow enough. Pick a general field, then start reading through the literature until you find a controversy or topic that is interesting. The topic should be:
  - a. **In a well-studied field.** An area of science that is well-studied will give you more topics to choose from (e.g., more series of studies on the same problem). It will also have many more authors, perspectives, theories, and controversies than a field that only a few people study.

b. **Of current interest.** You should pick a topic that is currently being researched, not an issue that no one has touched in thirty years.

Though many of your sources may be old, you should be able to find research being done on this topic today.

c. **Of interest to you.** Don't just pick a topic because it's a hot field of study. Pick one that you are personally interested or involved in.

d. **Narrow.** Estimate how long of a review you want to produce. Are you aiming for 10 pages? For 20? If you pick a topic that is too broad then you will find literally thousands of studies and your review will flounder.

2. **Search for articles.** If you have chosen too broad a topic, this can be a nightmare. Even with a narrow topic, finding relevant articles can be tough.

Here are some tips:

a. Try online searches using resources like Google Scholar. These allow you to search by keyword or author, and they often have the article available in an electronic format.

b. Ask your professors who specialize in the area. They'll be able to point you to the "classic" papers on this topic. Otherwise, you might find yourself getting "bogged down".

c. When you find a relevant article, scan its references. Usually, you will find several more relevant articles cited.

d. Look for older review articles on similar topics. Review articles written five or ten years ago can fill you in on the history of the topic and point you in the direction of later research.

3. **Select the relevant studies and relevant information.** Not all of the studies you have found will be relevant to your thesis. Also, only certain portions of each study might be relevant to you. Don't bog your reader down with too much – sift out the relevant studies and information.

4. **Write an outline.** As you read about your topic and gather your information, draft an outline of what your review will cover and in what order. Ideally, you should go through several drafts as you read more about your topic. Annotate your outline with which studies you will discuss where, when, why, and how. This will help you when you start to structure the actual paper.

The next step is to analyze the studies you have chosen.

## Writing a Literature Review: Analyzing the Literature

One of the hardest parts of a literature review is analyzing studies done by others. You must be able to evaluate the techniques used, results obtained, conclusions drawn, and errors present in each study, then apply your evaluation to your topic. Below are some questions to help you start thinking about each study.

For each research study you read, ask yourself:

1. Has the author formulated a thesis? What is the problem or issue being addressed? Is this problem relevant to my review?

2. Is the problem clearly stated? Is the significance of the problem discussed? (I.e., why should the reader care about this study?)

3. What are the strengths and limitations of the way the author has formulated the problem? Could the problem be approached more effectively from another perspective?

4. Is this paper primarily theoretical, experimental, interpretive, clinical? A

- combination? Could the study have been better if conducted in a different framework? (I.e., could a theoretical study have been strengthened by actual experiment? Was a clinical study crippled by a lack of theoretical work?)
5. What is the author's theoretical framework? For example, in the field of Mars geology, many authors build their papers on the idea that Mars was once a warm, wet planet, instead of the cold, dry planet we see today. Others start with the assumption that Mars has always been cold and dry. The theories to which the authors subscribe manifest themselves through their assumptions, interpretations, and conclusions. What assumptions have your authors made? And how do those assumptions affect the conclusions they draw?
  6. Has the author evaluated the literature relevant to the problem/issue? Does the author discuss studies that contradict his/her thesis as well as those that support it?
  7. How effective is the study's design? Is the method for investigating the problem appropriate? What errors does the method introduce? How accurate and valid are the measurements?
  8. Is the analysis of the data accurate and relevant to the research question? Are the conclusions validly based upon the data and analysis?
  9. Has the author objectively carried out the study, or only "proved" what he already believes?
  10. Does this study contribute to our understanding of the problem? How is it useful to us?
  11. How does this study fit into my review? How does its problem relate to the problem I will address? How will I use its conclusions, methods, or imitations to illustrate the point I am trying to make?
  12. Does this study support my thesis or not? Do I need to re-evaluate my thesis?

## Writing a Literature Review: Structure & Writing

**Your whole article should revolve around your thesis.** We cannot emphasize this enough: **thesis, thesis, thesis!**

Since no two theses are alike, no two review articles will be structured exactly alike; however, there is a general format that review articles should follow:

1. **Abstract.** A brief summary of your thesis, the major studies investigated, and conclusions drawn.
2. **Introduction.** This section should introduce the topic and your thesis, and should discuss why this topic is significant. It should clearly define exactly what this article will discuss, outline the order in which you will discuss it, and give the reader any background information needed to understand the coming sections.
3. **Body:** The body of your article depends on your topic. For example, if your topic discusses and evaluates three different methodologies, you might divide the body of the article into three sections, each discussing one of the methods. In these sections, be sure to describe and evaluate the studies in detail, comparing them and discussing their implications.
4. **Discussion and Conclusions:** You should conclude your review by restating your thesis and the purpose of the article, then discussing the conclusions you have drawn. You should also discuss the implications of your study and where you think research in this field should go from here.

5. **References:** Literature reviews published in professional journals usually cite 50 to 100 studies. A short literature review usually requires 20 or more.

6. **Length:** A short literature review is usually 7 to 10 pages long (single spaced). Most reviews, however, need to be longer to address all the material that needs to be discussed. Writing a good review is not about quantity, though – it's about quality. Weed out the unimportant and make your writing and logic tight.

In evaluating studies, describe them briefly, then discuss the relevant areas (e.g., research assumptions, theories tested, hypotheses stated, methodology, variables examined, results, interpretations, speculations, etc.) All studies have strengths and weaknesses. Identify them and discuss how they are relevant to your thesis. Be sure to compare the study with others that you have discussed.

### Questions to Ask Yourself About Your Review

As you are writing your review, keep the following questions in mind. When you have finished, go through and make sure you answer each of these questions for yourself:

1. Do I present a specific thesis, problem, or research question? (Make sure you're not just **summarizing** a field of study!)
2. Who is my audience? Will readers find my literature review relevant and useful?
3. What is the scope of my review? What types of publications did I use (journals, books, popular media, government documents, person communication?)
4. What am I reviewing? Is my issue addressing theory, methodology, policy, quantitative research, or qualitative research? A combination? Make sure this is clear in your review!
5. Has my search for studies been broad enough to contain all the relevant studies?
6. Has my search been narrow enough to exclude irrelevant studies?
7. Have I included enough sources? (Usually, anything less than a dozen sources is far too few for a literature review.)
8. Is the literature I've chosen actually relevant to my thesis? Does every study I've chosen to include shed some light on the problem my article is addressing?
9. Have I **critically analyzed** the studies or do I just summarize the articles? Have I discussed the strengths and weaknesses of the studies?
10. Have I cited and discussed studies that contradict my perspective?
11. Is my review more than just a descriptive summary? Is it organized into useful, informative sections that present different ideas revolving around my thesis?