



The Skills of Scientific Research 6
2013

Lecture outline

- Definitions
- What is a literature review?
- Use/Purpose?
- Components
- Literature Assessment
- What should I do before writing the literature review?
- Begin composing
- Conclusions

Definitions

- Literature
- Review
- Basics vs Experience

What is a literature review?

A literature review may constitute an essential chapter of a thesis or dissertation, or may be a self-contained review of writings on a subject.

A literature review discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time period.



What is a literature review?

A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis.



Use/Purpose?

Place each work in the context of its contribution to the understanding of the subject under review



Use/Purpose?

Describe the relationship of each work to the others under consideration



Use/Purpose?

- Resolve conflicts amongst seemingly contradictory previous studies
- Identify areas of prior scholarship to prevent duplication of effort



Use/Purpose?

- Point the way forward for further research
- Place one's original work (in the case of theses or dissertations) in the context of existing literature



Use/Purpose?

Identify new ways to interpret, and shed light on any gaps in, previous research



Components

Similar to primary research, development of the literature review requires four stages:

1-Problem formulation—which topic or field is being examined and what are its component issues?

Components

Similar to primary research, development of the literature review requires four stages:

2-Literature search—finding materials relevant to the subject being explored

Components

Similar to primary research, development of the literature review requires four stages:

3-Data evaluation—determining which literature makes a significant contribution to the understanding of the topic

Components

Similar to primary research, development of the literature review requires four stages:

4-Analysis and interpretation—discussing the findings and conclusions of pertinent literature

Components

Literature reviews should comprise the following elements:

An overview of the subject, issue or theory under consideration, along with the objectives of the literature review

Components

Literature reviews should comprise the following elements:

Division of works under review into categories (e.g. those in support of a particular position, those against, and those offering alternative theses entirely)

Components

Literature reviews should comprise the following elements:

Explanation of how each work is similar to and how it varies from the others

Components

Literature reviews should comprise the following elements:

Conclusions as to which pieces are best considered in their argument, are most convincing of their opinions, and make the greatest contribution to the understanding and development of their area of research

Literature Assessment

In assessing each piece, consideration should be given to:

- **Provenance**
- **Objectivity**
- **Persuasiveness**
- **Value**

Literature Assessment

In assessing each piece, consideration should be given to:

Provenance—What are the author's credentials? Are the author's arguments supported by evidence (e.g. primary historical material, case studies, narratives, statistics, recent scientific findings)?

Literature Assessment

In assessing each piece, consideration should be given to:

Objectivity—Is the author's perspective even-handed or prejudicial? Is contrary data considered or is certain pertinent information ignored to prove the author's point?

Literature Assessment

In assessing each piece, consideration should be given to:

Persuasiveness—Which of the author's theses are most/least convincing?

Literature Assessment

In assessing each piece, consideration should be given to:

Value—Are the author's arguments and conclusions convincing? Does the work ultimately contribute in any significant way to an understanding of the subject?

Let's get to it! What should I do before writing the literature review?

Clarify

- If your assignment is not very specific, seek clarification from your instructor:
- Roughly how many sources should you include?
- What types of sources (books, journal articles, websites)?



Let's get to it! What should I do before writing the literature review?

Clarify

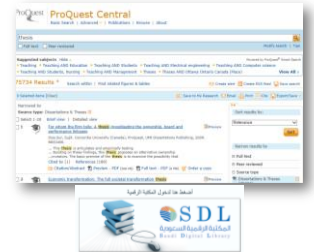
- Should you summarize, synthesize, or critique your sources by discussing a common theme or issue?
- Should you evaluate your sources?
- Should you provide subheadings and other background information, such as definitions and/or a history?



Let's get to it! What should I do before writing the literature review?

Find models

Look for other literature reviews in your area of interest or in the discipline and read them to get a sense of the types of themes you might want to look for in your own research or ways to organize your final review.



Let's get to it! What should I do before writing the literature review?

Consider whether your sources are current

Some disciplines require that you use information that is as current as possible. In the sciences, for instance, treatments for medical problems are constantly changing according to the latest studies. Information even two years old could be obsolete.

Strategies for writing the literature review

• Find a focus

A literature review, like a term paper, is usually organized around ideas, not the sources themselves as an annotated bibliography would be organized. This means that you will not just simply list your sources and go into detail about each one of them, one at a time.

Strategies for writing the literature review

- **Construct a working thesis statement**
- Use the focus you've found to construct a thesis statement. Yes! Literature reviews have thesis statements as well! However, your thesis statement will not necessarily argue for a position or an opinion; rather it will argue for a particular perspective on the material. Some sample thesis statements for literature reviews are as follows:
- *The current trend in treatment for congestive heart failure combines surgery and medicine.*

Strategies for writing the literature review

• Consider organization

You've got a focus, and you've narrowed it down to a thesis statement. Now what is the most effective way of presenting the information? What are the most important topics, subtopics, etc., that your review needs to include? And in what order should you present them? Develop an organization for your review at both a global and local level:

First, cover the basic categories

Organizing the body

Chronological

Begin composing

- **Once you've settled on a general pattern of organization, you're ready to write each section. There are a few guidelines you should follow during the writing stage as well.**

Begin composing

- **Use evidence**
- A literature review in this sense is just like any other academic research paper. Your interpretation of the available sources must be backed up with evidence to show that what you are saying is valid

Begin composing

- **Be selective**
- Select only the most important points in each source to highlight in the review. The type of information you choose to mention should relate directly to the review's focus, whether it is thematic, methodological, or chronological.

Begin composing

- **Use quotes sparingly**

Begin composing

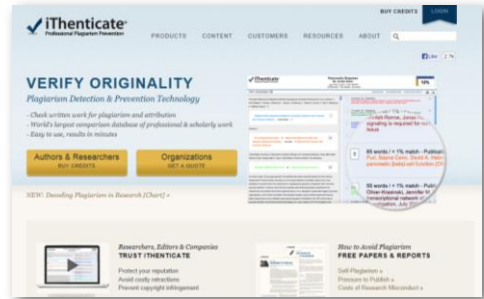
- **Summarize and synthesize**
- Remember to summarize and synthesize your sources within each paragraph as well as throughout the review.

Begin composing

- **Keep your own voice**
- While the literature review presents others' ideas, your voice (the writer's) should remain front and center.

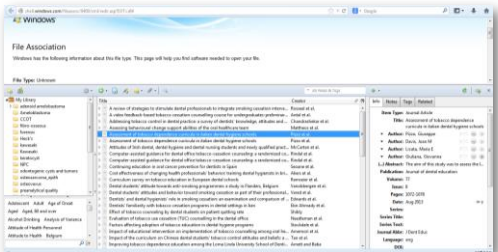
Begin composing

- Use caution when paraphrasing
- When paraphrasing a source that is not your own, be sure to represent the author's information or opinions accurately and in your own words.
- [Plagiarism??](#)



References managing

- How to cite?
- Reference managers



Revise, revise, revise

- Draft in hand? Now you're ready to revise. Spending a lot of time revising is a wise idea, because your main objective is to present the material, not the argument. So check over your review again to make sure it follows the assignment and/or your outline.
- Then, just as you would for most other academic forms of writing, rewrite or rework the language of your review so that you've presented your information in the most concise manner possible.
- Be sure to use terminology familiar to your audience; get rid of unnecessary jargon or slang. Finally, double check that you've documented your sources and formatted the review appropriately for your discipline.

What are the tips in writing a good literature review

- Know What You Cite

Once you have it in your list, make sure you understand it very well so you can answer all questions that the dissertation committee will throw at you during defense



What are the tips in writing a good literature review

- **Ensure It Is Related**

It must be in line with your topic or else you'll be confronted with deadly questions that you can find no answers to save your grade

What are the tips in writing a good literature review

- **Foresee Questions**

As a general tip during the defense, it would greatly help if you create yourself a body of questions that the dissertation committee may ask. You can consult this with your advisor and help you arrive on the right answers and how to answer it.

Conclusion

Being the trickiest part of a dissertation, a researcher must handle keenness on details and a lot of patience.

Conclusion

Indeed, the dissertation literature review consumes most the time and energy of a researcher in proving his findings to the board of dissertation committee.

Conclusion

The best way to do this is gather the best ones and keep it in line with your topic in order to avoid unnecessary questions gathered from an excessive analysis

The screenshot shows the Coursera interface for the course "Writing in the Sciences" by Stanford University, taught by Dr. Kristin Sainani. The page features a video player with a play button and a description of the course. The description states: "This course teaches scientists to become more effective writers, using examples and exercises. Topics include: principles of good writing, tricks for writing faster and with less anxiety, the format of a scientific manuscript, and issues in publication and peer review." The workload is listed as 4-8 hours/week, and subtitles are available in English and Portuguese. The course is scheduled for Sep 24th 2012 (8 weeks long) and has 733 students and 561 reviews. There are buttons for "Sign Up" and "Add to Watchlist".

can be problematic when course
the need for multi-angle
instrumentation.
The particle size-dependent
error in single angle metro-
measurements can be reduced
using equation (5). Thus, the
can be Watch into video
upper acceptable error in molecular
weight measurement

$$\%E_M = |P(\theta) - 1| * 100 \quad (5)$$

Stanford
Writing in the Sciences
Dr. Kristin Sainani
This course teaches scientists to become more effective writers, using
examples and exercises. Topics include: principles of good
writing, tricks for writing faster and with less anxiety, the format of a
scientific manuscript, and issues in publication and peer review.
Workload: 4-8 hours/week
Taught in: English
Subtitles Available in: English, Portuguese

Sessions:
Sep 24th 2012 (8 weeks long) [Sign Up](#)
Future sessions [Add to Watchlist](#)

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<http://www.dissertation-ideas.com/dissertation-introduction/>
<http://writingcenter.unc.edu/handouts/literature-reviews/>
<https://www.coursera.org/course/sciwrite>

Many thanks !

Questions?