



## WRITING ACROSS THE CURRICULUM

### Writing a Literature Review in the Sciences

A literature review in the hard (i.e., biology, chemistry, etc.) and social sciences (i.e., psychology, education, etc.) is an objective, integrated summary and evaluation of current literature on a research topic, intended to give the reader a survey of relevant research in the area under study. Often these reviews are a component of an article based on original research; however, literature reviews are often articles or assignments unto themselves.

It is important to distinguish between a literature review and an annotated bibliography. Annotated bibliographies discuss and evaluate the contributions of other writers but treat each source independently, creating a detailed reference list of books, articles, chapters, documents, etc. Literature reviews, however, organize, discuss, and often evaluate the ideas, topics, and discoveries of other researchers in a synthesized essay.

In the hard and social sciences where literature reviews are common, instructors frequently assign a literature review as a project of its own or as an early stage in a larger empirical research project guided by a specific research question and developed through a description of the project's methods, results, and conclusions.

## STRUCTURE

The beginning section or introduction provides a concise overview of the topic and scope of the literature review and contains your thesis statement, which articulates how you see the common themes and trends of the research as related to your project. This thesis statement, unlike those within a research paper, does not necessarily indicate your position or opinion on the topic. The following example is taken from a "Study of Obsessive Compulsive Beliefs: Relationship with Eating Disorders" by M. Roncero, C. Perpina, & G. Garcia-Soriano, 2011.

In the last 50 years, numerous studies have focused on the relationship between Obsessive Compulsive Disorder (OCD) and Eating Disorders (EDs), providing evidence both for and against this relationship.

This thesis statement both summarizes the trends in the research that will be discussed in the literature review and suggests a connection to an overall study. It does not, however, take sides in the debate about whether there is a relationship between OCD behaviors and EDs. It simply indicates that the research has shown there may be such a relationship.

The paragraphs following the introduction of a literature review include a discussion of the relevant sources as they relate to the literature review's thesis and, if appropriate, the purpose of the overall project. Here, you organize, synthesize, and evaluate the research of other authors according to the specific themes and trends that you judge most significant in relation to the thesis.

The concluding paragraph or paragraphs of the literature review sum up what has been discussed and may offer recommendations for further research. These recommendations can be based on the limitations found in previous research discussed in the review, or they can serve as an indicator of how your project will become part of the discourse on this subject.

If the literature review is part of an empirical research article, these latter paragraphs are a reminder of how the literature relates to the purpose of the larger project, act as a transition to lead the reader into the “Methods” section of the paper, and may include a hypothesis suggested by the literature. However, if the literature review is a stand-alone assignment, then these paragraphs form the conclusion that reaffirms your analysis based on your thesis.

## **TYPES OF SOURCES**

In the hard and social sciences, there is an expectation that your research will be based on the most appropriate and current literature. For that reason, usually only literature that has been completed within the last 5-7 years and is strictly relevant to your project should be included in the literature review. There are two exceptions to this rule. One is if your goal is to present a historical overview of a concept, problem, or phenomenon. In this case, the inclusion of older research is necessary. The second exception is including landmark studies or theories in a literature review. Because of their importance and impact on the field, such studies are essential in describing the full extent of the scholarship on a specific topic and therefore are permissible to include despite not adhering to the 5-7 year limit.

Primary sources are the only sources that should be included in a literature review. Primary sources are based on original experience, research, and/or experimentation that provide explicit description and discussion of the methods used to carry out the research as well as the results. Primary sources include empirical research reports, theoretical articles, literature review articles, interviews, anecdotal reports, and reports on professional practices and standards. They do not include generalized summaries of original research as found in textbooks and news media, which are examples of secondary sources.

**Note:** Because there are differing opinions about whether literature reviews are primary sources, consult your instructor about using them as sources in your own literature review.

## **SYNTHESIZING THE SOURCES FOR THE LITERATURE REVIEW**

Though the sources included in a literature review will all be related to the overall topic of the research project or assignment, it is up to the writer of the literature review to identify common themes or trends among all of the sources. In order to do so, it is necessary to think critically about the information gathered from the various sources. The following questions are a suggested beginning to the critical thinking process:

What broad topics do the sources have in common (e.g., OCD behaviors and ED behaviors)? Can those topics be divided further into subtopics (e.g., ritualistic compulsions related to a variety of OCD thoughts, and/or compulsions related to eating)? What do the subtopics have in common (e.g., irrational beliefs, need to exact control, prior trauma as a catalyst)?

Do the subtopics focus on a particular aspect of the issue, such as a specific, age, gender, race, ethnicity, and/or relationship to the topic or phenomena being studied? If so, how is each aspect treated differently or similarly in the various sources?

Do the sources use similar or different methodologies? Do they use similar or different samples? Do they use similar or different instruments? Do they produce similar or different results? Do these methodologies leave gaps in the research? Are there other relevant topics the sources have not explored or have not explored fully enough? Are there other subtopics or subgroups that have been neglected by research? What conclusions can be drawn from the gaps in research?

Is the research based on specific theories? What are they? Are there differing theories on the topic? How do the studies in the literature advance specific theories? Does the research support, contradict, or call into question certain aspects of the theory? What conclusions about the topic and/or the theory can be drawn from the sources?

Themes and topics within the literature will emerge as the answers to these questions. These answers will also help you to develop the literature review's thesis statement and organization.

## **SAMPLE OUTLINE FOR A LITERATURE REVIEW**

Following is a sample thesis statement and topic outline for a literature review on the connection between OCD and ED related behaviors from the article "Study of Obsessive Compulsive Beliefs: Relationship with Eating Disorders" by M. Roncero, C. Perpina, & G. Garcia-Soriano, 2011.

**Thesis statement:** In the last 50 years, numerous studies have focused on the relationship between Obsessive Compulsive Disorder (OCD) and Eating Disorders (EDs), providing evidence both for and against this relationship.

I. Introduction: Establish the topic (i.e., relationship between OCD and EDs) and briefly indicate an overview of evidence that suggests the disorders occur together.

II. Body

- A. Specifically describe research related to the topic (i.e., discuss research relating OCD thought patterns to EDs). Describe model for OCD thought patterns: Inflated responsibility, Over-importance of thoughts, Importance of controlling one's thoughts, Overestimation of threat, Intolerance of uncertainty, Perfectionism.
- B. Introduce studies that use the model to investigate OCD thought patterns in patients with EDs. Indicate which OCD thought patterns from the model were most highly related to EDs.
- C. Describe studies that focus on each of the chosen OCD thought patterns (e.g., Perfectionism) and its relationship to EDs.
  1. Perfectionism
  2. Over-importance of thoughts
  3. Importance of controlling one's thoughts

### III. Conclusion

- A. Discuss gaps and limits in research on the relationship between OCD and EDs.
  1. Describe how the applied model for research on relationship between OCD and EDs is based on OCD patterns and not designed to measure specific ED behaviors.
  2. Examine how studies do not differentiate between types of EDs (restrictive, purgative, non-purgative) and their related symptoms.
  3. Recommend investigating the relationship between OCD thought patterns and each type of ED individually to provide further evidence supporting the relationship.
- B. Explain how the current study will fill in these gaps in the research; investigate OCD thought patterns through restrictive, purgative, and non-purgative ED symptoms individually.

## **A FINAL WORD ON LITERATURE REVIEWS**

Though based on the relevant research of other authors, a literature review is an original piece of writing that summarizes, analyzes, and synthesizes information, focusing on a specific topic in essay form. Literature reviews not only allow you to demonstrate your understanding of that topic within the confines of your particular discipline, but also let you contribute a unique interpretation and analysis of the research to the larger discussion on that specific topic.

Galvan, J. L. (2006). *Writing literature reviews: A guide for students of the social and behavioral sciences*. Glendale, CA: Pyrczak.