

Course : COMP6575 – Research
Topics in Computer Science
Effective Period : December 2019

Review of the Literature and Citations

Session 03

Learning Outcomes

At the end of this session, students will be able to:

- LO 1: Describe the basics of writing research paper and the research lifecycle
- LO 2: Select the research topic, literature and writing strategies used in the project

Outline

1. They Why?
2. Purpose
3. Steps in conducting a literature review
4. Resources
5. Table of comparison
6. Citations
7. 5 Goals of Citations
8. Other Problems with Citations

**Why do we need literature
review?**

The WHY?

- Literature review helps to determine whether the topic is worth studying
- it provides insight into ways in which the researcher can limit the scope to a needed area of inquiry
- It shares with the reader the results of other studies that are closely related to the one being undertaken
- Literature sections in proposal are generally shaped from the larger problem to the narrower issue that leads directly into the methods of a study

The purpose

- In general, the literature review can take several forms. Cooper (2010) discussed 4 types : Literature reviews that
 1. Integrate what others have done and said
 2. Criticize previous scholarly works
 3. Build bridges between related topics
 4. Identify the central issues in a field

Steps in Conducting a Literature Review

- A literature review means locating and summarizing the studies about a topic.
- There is no single way to conduct a literature review, but many scholars proceed in a systematic fashion to capture, evaluate, and summarize the literature:
 1. Begin by identifying key words, which is useful in locating material in an academic library at college or university.
 2. With these key words in mind, go next to library and begin searching the catalog for holdings.
 3. Initially try to locate about 50 reports of research in articles or books related to research on your topic.
 4. Skip the initial group of articles or chapters, and duplicate those that are central to your topic.
 5. As you identify useful literature, begin designing a literature map.
 6. Draft summaries of the most relevant
 7. After summarizing the literature, assemble and structuring it thematically or organizing it by important concepts

Resources

- Some journals and proceedings papers are not available free to the public.
- There is a social network called Research Gate. You could register there, some researchers uploads their works there.
- You could also try Google Scholar to find your references topic.

Table of comparison

- Another way of managing sources and arguments presented in them is to use a literature review matrix (also called synthesis matrix). Literature review matrix is a table in which you can represent the views, ideas, or data according to thematic categories that correspond to your re

Author	Year	Title	Aims	Method	Sample	Conclusion	Comments
Willis	2009	Memory efficiency and critical thinking among entry-level students	Test whether memory correlates positively with critical thinking	Quiz	50	Good memory positively influences critical thinking	Interesting quiz structure. Framing of critical thinking and memory is too similar, leading to exaggerated correlation.
Qinhua	2011	De Bono Mnemonic places technique and note taking	Examine how the De Bono mnemonic places technique influences note taking	Quiz and note analysis	12	Significant improvement (20%) in 6-strong sample.	One of the better papers on memory impact of note taking. Method useful for constructing experiment for testing critical thinking skills
Summers	2007						
D'Brant	2012						

Citations

Citations

- Is a reference to a source of information or data
- Things that can be cited journal articles, conference proceedings, books, student theses, newspapers, non-print sources (such as film or other recorded media), websites or other online resources, computer materials and personal communications.
- The citation should be located in the text in such a way that it is clear what material requires the citation
- Often, this is at the end of a sentence, but sometimes it must be put in the middle of the sentence to enhance clarity

The 5 Goals of Citations

1. Provide **sufficient context of the work** to allow for critical analysis of the work by others and thus to enable the readers to gauge themselves whether the author's conclusions are justified
2. Give the reader **sources of background and related material** so that the current work can be understood by the target audience (thus creating a web of science)
3. Establish **credibility with the reader** (e.g., the authors knows the field, have done their homework, etc.) and/or inform the reader that the paper belongs within a specific school of thought;
4. Provide examples of alternate ideas, data, or conclusions to **compare and contrast** with this work
5. **Acknowledge and give credit** to sources relied upon for this work (i.e., acknowledge the use of another's ideas or data), thus upholding intellectual honesty.

Verify, Verify, Verify

- One of the most pervasive problems with citations is that they are frequently incomplete or inaccurate
- It is the job of the authors to verify the accuracy of the references
- For too few authors take this advice seriously. Several studies found that between 34% - 67% of references in a variety of medical and biomedical journals contains errors (Major and Minor errors)
 - Major error
the article could not be found given the information in the citation
 - Minor error
it include punctuations or spelling mistakes, mistakes in the article titles, mistakes in the name and initials of the author(s), and citation style mistakes. These errors serve as irritants to the reader, they can still find the article, but

Other Problems with Citations

- Spurious citation
Citations that are not needed but are included anyway
- Biased citations
Biases include overciting of friends' or colleagues' work, omitting cites to the work of rivals, and gratuitous citations in an attempt to curry favor with a boss or potential referee
- Self-cites
There is nothing wrong with self citations. Knowing as we do the tendencies of many scientists toward self-promotion, one fears that self-cites may be designed to boost the recognition of the author rather than increase the value of the paper to the reader
- Excluding contrary evidence
a form of biased citations where citations to prior work whose conclusions or data contradict the current work are omitted

References

- John W. Creswell. (2017). Qualitative, Quantitative, and Mixed Methods Approaches Research Design: 5th edition. SAGE Publications, Inc. ISBN: 978-1-5063-8671-3
- Chris A. Mack. (2018). How to Write a Good Scientific Paper. Society of Photo-Optical Instrumentation Engineers (SPIE). ISBN: 978-1-5106-1913-5
- <https://www.monash.edu/rlo/graduate-research-writing/write-the-thesis/introduction-literature-reviews>
- <https://writing.wisc.edu/handbook/assignments/reviewofliterature/>
- <https://writing.wisc.edu/wp-content/uploads/sites/535/2018/08/Lit-Review-Moore-NSF-1.pdf>

In Class Assignment

- Please find at least 10 research papers and do the table of comparison!

The background is a solid blue color. On the left side, there are three large, overlapping circles of varying shades of blue, creating a stylized, organic shape. The circles overlap in a way that creates a central area where all three shades meet.

Thank you