



Information Technology Writing the Literature Review



Objectives

- To understand the functions that literature reviews perform
- To think about how to structure your literature review
- To consider ways of incorporating and evaluating sources

At the end of the session you will have a preliminary structure for your own literature review

Two main aims of literature reviews

1. Exhaustive literature review
 - To give a comprehensive summary of the current state of knowledge in a chosen field

2. Research-supporting literature review
 - To create a hierarchy of research questions
 - To consider the current state of research, as relevant to the research question
 - To identify gaps in the field, and the potential/need for new research



Two different types of research questions:

What are the currently available protocols that deal with security concerns in wireless sensor networks?
(i.e. an exhaustive review)

or...

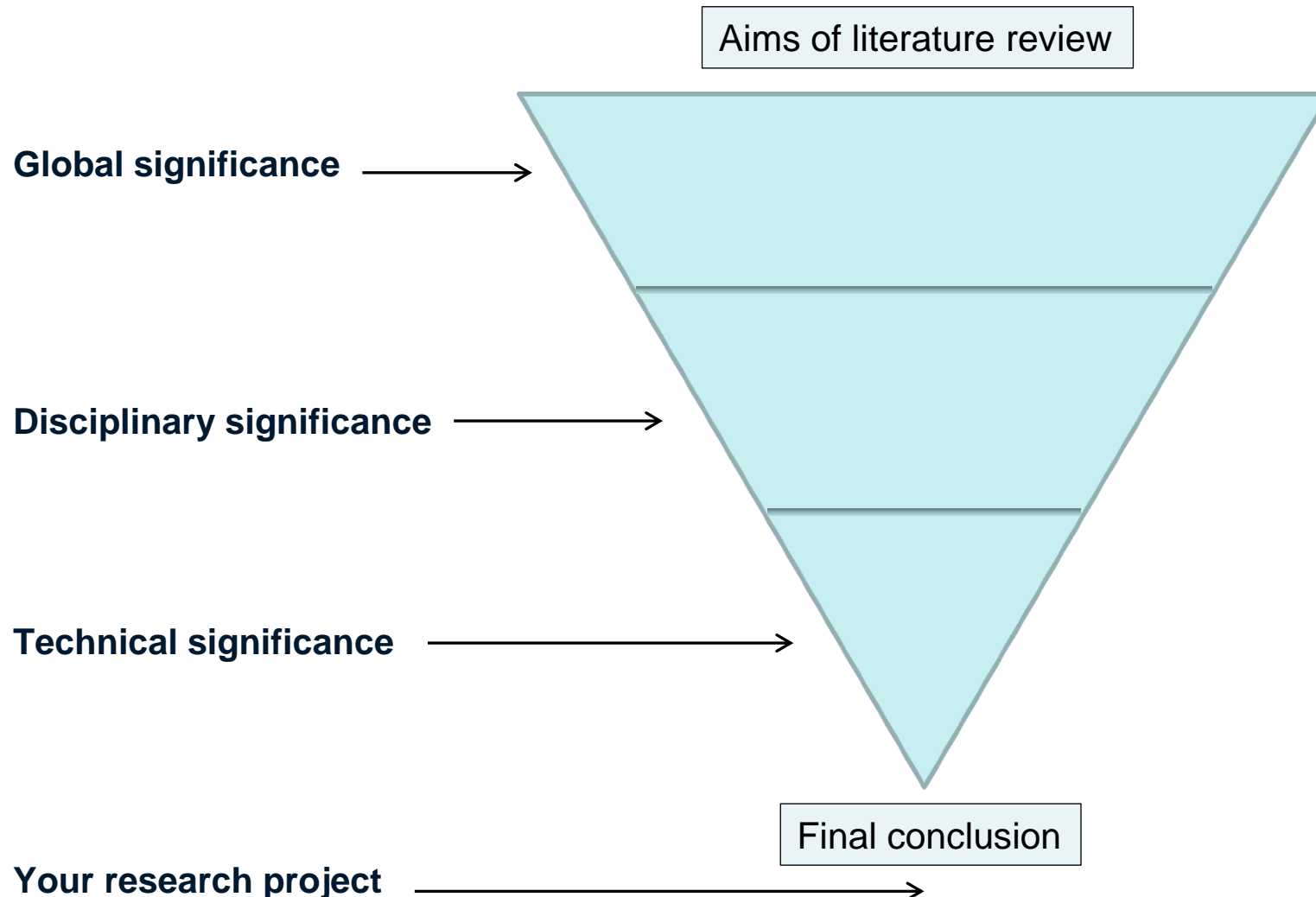
Which protocol would be most relevant and best suited for applications in the security area of wireless sensor network?
(i.e. a research-supporting review)

Exercise 1a

Defining the scope of your literature review

- Get a piece of paper, and respond to the following questions:
 - What are the aims of your literature review? This will not be the same as the aims of the your project. (It will be the aims of the document)
 - To provide an overview of ...
 - To discuss the potential benefits of ...
 - To examine existing approaches to...
 - What would you like to argue in the end? (What will be your conclusion)
 - That the approach X has strong potential to be applied in...
 - That it is important to improve the functionalities of ...
- So what comes in between?

The narrowing structure of a Literature Review



Exercise 1b

Defining the scope of your literature review

- Write down the concepts and ideas you feel you have to include as topics in your literature review, and then categorise these words in an order:
 - It may be chronological, thematic, general to particular, etc., but you should look for a **hierarchical structure** in these words (consider the order of information to feed your reader)
 - Make sure that these words **bridge** the aims of the literature review and your conclusion as seamlessly as possible
 - Then decide what kind of **emphasis** you want to give each topic; some topics will deserve more emphasis than others
 - This will give you some idea of the structure of your literature review, and the length of each section
- What, then, would you include in each section?

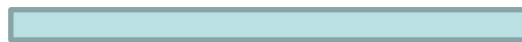
Breaking down your Literature Review

2 Literature Review

2.1 Introduction



2.2 Plagiarism detection

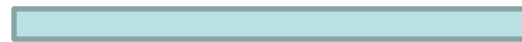


2.3 Developments in plagiarism software

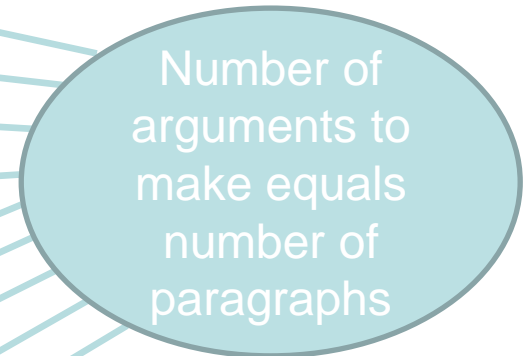


2.4 Software metrics

2.4.1 Fixed-size metrics



2.4.2 Variable-size metrics



Breaking down your literature review into arguments

1. After you create a structure, you can break it down further, and create a detailed plan that outlines the **main claim** or **argument** that will be elaborated in each individual paragraph
2. When writing each paragraph, clearly state this claim at the start of the paragraph, and then proceed to back it up with relevant evidence from the literature. At the end of each paragraph, tie everything together; do not move on to the next step until the next paragraph

Writing with purpose

- Your literature review should aim to **convince your readers** that your view on the subject is valid, regardless of how the document will be used:
 1. When writing a standalone **literature review** you should demonstrate that your understanding of the current disciplinary landscape is fair and correct
 2. When writing a **proposal or thesis** you should demonstrate that your research project is worthwhile and valid
- Thus, you will usually need to explicitly state your take on each article
 - Otherwise your literature review will not be argumentative, but rather, it will simply be a summary of the literature

Composing a review

- General steps for writing a review
 1. Summarise and describe the article
 2. Elaborate the point you want to make/emphasise
 3. Implicate to your own use/application
- This will be a building block for the **overarching argument** in your literature review
 - Literature review is a **type of writing** (rather than the name of a chapter), and is usually 'research about research'
 - It has its own direction (driven by its questions and answers) to convince/persuade its readers

Composing a review – an example

- General steps for writing a review
 1. Summarise and describe the article
 2. Elaborate the point you want to make/emphasise
 3. Implicate to your own use/application

“The study by Williams et al. (2009) proposed a set of protocols that are specifically designed for use in the contexts of wireless sensor networks. Though the evaluation of the protocols remains partial, the model used in this study is unique and holds strong potential to be used as a platform for further development. The current project will follow this model as a framework, as we develop and implement our own protocols.”

Exercise 2

Composing a review

1. Assume that you need to make one of the following points using the article provided. Compose an appropriate paragraph for each case:
 - a) Your project is based on this article's approach, and you are attempting to affirm the findings of this article.
 - b) You will use the methods used in the article, and will need to refer to this article to make the point that this method is effective.
 - c) You are conducting research similar to that of the article, and you want to affirm the significance of your project by making reference to the article.

Types of information you can/cannot obtain from academic articles

- What is written
 - Background, significance and literature review
 - Research topics, questions and the nature of the research
 - Research designs, methods and approach
 - Results and data
 - Discussions and conclusion
- What is not written
 - Their relevance to your research
 - Limitations/flaws of the research (potentially unknown to the authors)

Limitations of the research: two major inconsistencies

1. A lack of consistency between Qs and As

- The conclusion drawn does not correspond to the research questions proposed
 - *Then identify what the paper actually achieved*

2. A lack of coherence between information

- The conclusion corresponds with the research questions, but there are parts where the argumentation is not logically linked
 - *Work backwards, and identify which parts of the paper are wobbly*
 - *Check with your colleagues /supervisors too – it can be your misreading*

Drawing the literature together

- Try to give an overview of the current state of knowledge by synthesising various sources:
 - You can compare or contrast similar studies, in order to demonstrate trends or inconsistencies
 - You can make new logical connections between different research studies
 - You can look for patterns, or an overarching order, and try to make sense of the body of literature relevant to the field

A summary of the key points

- A literature review provides a relevant context for your research project, and demonstrates the foundation of previous research upon which your own research will build
- It demonstrates the validity of your **research project**, and identifies the gap that your research will fill