

AIRS

Advanced Information Research Skills

AIRS Module 1

Engage



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Module 1: Engage

HOW TO FORMULATE A GOOD RESEARCH QUESTION

This module identifies the process in the formulation of research questions, identification of key research vocabulary and the need to reference supporting data appropriately. By the end of this module you should be able to:

- design a research question that applies the six properties of a good research question identified by Foss and Waters (see the background reading below)
- develop a systematic approach to searching the literature using a search methodology
- apply evaluation criteria and use the tools available to assist in evaluating the quality and credibility of retrieved information.

1.1 How to formulate a good research question

Now that you are doing your own research, you need to formulate your own research question or questions to be answered. A good research question helps to:

- guide the research process
- construct a logical argument
- write a literature review
- plan thesis chapters
- devise efficient search strategies

Background reading

Foss, S. K., & Waters, W. J. C. (2007). [Developing your itinerary: the preproposal](#). In S. K. Foss & W. J. C. Waters (Eds.), *Destination dissertation: a traveler's guide to a done dissertation* (pp. 35–46). Lanham: Rowman & Littlefield Publishers.



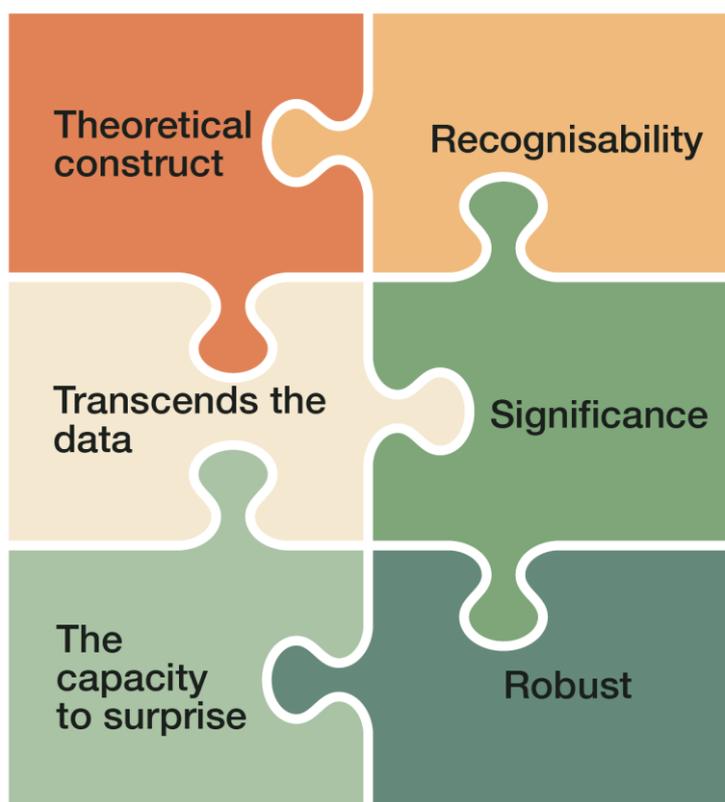
[Study Smart](#) provides an introduction to researching and writing for a specific question or topic (such as an assignment).

1.2 The six properties in detail

This section will help you write a good research question to guide your research and writing. You will revise and refine this question throughout your research as you come to a more sophisticated understanding of your topic and target a more specific area of scholarship.

A well-defined research question has six properties:

1. identifies the theoretical construct you want to learn more about
2. assists you to code literature according to a logical structure
3. transcends the data used to conduct the research
4. draws attention to the significance of the research
5. has the capacity to surprise the researcher as they research
6. encourages a complex answer (i.e. not a 'yes' or 'no' response).



Properties of a good research question

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Properties of a good research question: A good research question identifies the theoretical construct, transcends the data and has recognisability, significance, robustness and the capacity to surprise.

Difference between a research question, title, hypothesis and research focus

A research question is not the same as a thesis title, research problem, hypothesis or research focus, although they are interrelated and support one another. To further define these elements:

- A *research question* summarises the significant issue your research will investigate.
- The *title* consists of the topic and outcome of a research project.

- The *research problem* explains the knowledge gap your research will address.
- A *hypothesis* is a predicted answer to the research question that can be tested and is based on prior research.
- A *research focus* specifies the scope or domain of inquiry.

What do I need to consider when writing a research question?

Identify the theoretical construct

The theoretical construct is the phenomenon, event, or experience you will be researching.

Example: Within a [thesis](#) titled 'An empirical investigation of health information system failure in regional Sri Lanka' the theoretical construct is 'health information system'.

You need to find and search for synonyms for the theoretical construct to ensure you do not miss finding important research because of superficial differences in vocabulary (see Module 2.1 *Search strategies*).

Example: 'Public health planning' is similar in meaning to 'health information system'. Both these phrases are used in the literature and might need to be researched.

Recognisability

A well-defined theoretical construct helps you identify relevant versus irrelevant research. It ensures that you are always searching for relevant matches in your data and can avoid wasting time reading and writing about ideas that are not directly related to your research. The theoretical construct must be clear, precise and must conform to the technical usage in your discipline.

Example: Instead of the broad topic: 'health information systems' choose 'decentralised health information systems in developing countries'. Focusing on a subset of health information systems enables you, as a researcher, to recognise specific data relevant to a tightly defined construct.

Transcend the data

The method you use to answer your research question is (usually) not included in the question itself. This is because different kinds of data can be used to answer your research question and the significance of your research should go beyond the methods you have used to determine your answers.

Example: A researcher could collect data by: conducting interviews, conducting experiments, writing a meta-analysis or studying a particular region in depth to justify solutions applicable to broader geographic, demographic or socioeconomic groups.

There are some dissertations where the data might be specific enough to include in the research question.

Example: A creative industries dissertation may define a time period, a choreographer or type of artistic practice.

There are various resources available for finding out more about suitable research methodologies to answer your research question. [SAGE Research Methods \(SRM\)](#) can help researchers in the social sciences or humanities design appropriate qualitative and quantitative research methods for data collection. QUT's [Research Student Centre Training Resources Wiki](#) provides additional resources to assist you to select the right research method.

Significance

Your research question should suggest how your study will increase knowledge of the theoretical construct. You need to convey what interests you about the theoretical construct and what will be different about it by the time your work is finished. Significance will reflect specialised knowledge in your discipline.

Example: Your new contribution might be to suggest ways to make health information timely and reliable to ensure *evidence-based health planning in decentralised, developing world health systems*. You begin your research knowing that health information systems lack good information; your new contribution will be to offer evidence-based insight and solutions to improve health information systems in developing nations.

What makes research exciting and surprising is discovering insights and solutions that you will not know at the start of your research.

Capacity to surprise

Valuable research surprises your reader with new ideas or new relationships between existing ideas. Your research question needs to hint at surprising possibilities to increase the probability of original results.

Example of an unsurprising research question: 'How do health information systems fail to provide reliable, timely information?'

This research question presupposes that all aspects of health information systems fail and that there are no possibilities other than to confirm this statement. A researcher is unlikely to be surprised with this sort of question because their data will simply confirm this judgment.

Choosing an unsurprising, expected approach with your research question compromises your capacity to contribute to your discipline with original publications. If you already know the answer to your research question at the start you are simply documenting known information, rather than researching.

Examples of surprising research questions:

'How do climate-driven changes in the biophysical environment affect the sustainability of sub-tropical parklands?'

'What strategies do union organisations use to retain their radicalism over time?'

'What are the impacts of Starbucks on the consuming patterns of its patrons?'

Each of these research questions allow for surprising and original answers. Do not worry about whether your question will produce significant findings. A research question that follows these six principles and is guided by the expertise of your supervisory team will yield new discoveries about your theoretical construct.

Robustness

Your question must be capable of generating multiple insights about the theoretical construct you are studying, and thus lead to complex results. It should not be a question to which the answer is 'yes' or 'no' because such an answer is not a complex result.

Example of a non-robust research question: 'Are public health information systems in Sri Lanka effective for accurate decision-making?'

Example of a robust research question: 'How do regional health information systems provide information support for evidence based health planning and interventions?'

A robust question allows for surprising and complex results, such as discovering that there are some effective sub-systems within a broadly inefficient system. A well written research question makes research interesting to write and to read.

1.3 Create a good research question

Activity – create a good research question

Create a research question that incorporates each of the six principles outlined above. Some of the following structures might be helpful:

What is the nature of	How do ... differ	What are the functions of
How do ... perceive	What factors affect	What strategies are used
How do ... respond	How do ... affect	What are the effects of
How are... defined	Under what conditions do	

What is the relationship between ... What are the mechanisms by which

Discuss your research question with your supervisory team and make sure they approve it before you start accumulating too many articles and books. Write down your research question at the start of your resource log. By the end of AIRS, you will most likely have altered your research question considerably, which reflects your research journey and your increasingly sophisticated understanding of your topic.

Summary

Writing your research question is one of the first things to focus on when you begin your research journey. Your question identifies your contribution to research, has the capacity to surprise and can produce robust results. A good research question scaffolds your entire research project and keeps you excited on the journey.