

Reading at University – Critiquing research

Academic research is most often presented in the form of research papers or research articles. While the structure can vary from one discipline to another, they tend to have the following sections:

- Abstract
- Introduction
- Method
- Results
- Discussion/Conclusions
- References

Academic journal articles are usually written for specialist audiences. For this reason they often use highly technical language and address concepts at a sophisticated level. Expect to read over the article several times in order to fully understand it - even 'experts' often need to do this. At the first reading your focus is in gathering basic information and gaining an overview of the research topic and approach. Depending on your purpose, you may need to read the article several more times in order to fully understand the research aims, method and findings and be able to evaluate these (May, 2014).

Questions to consider in choosing and evaluating research articles

Reading critically, particularly in the science and health domains, often involves evaluating the research on which research papers and articles are based. Questions like those listed in Table 1 (below) can be useful for this purpose.

Questions to Guide Your Reading
Who were the researchers?
Why was the research carried out? Why was it needed?
What was the research question/focus?
What research method was used? Was it appropriate to investigate the research question?
Has the research method been explained in adequate detail (could it be repeated based on the explanation provided)?
Are results generalisable beyond the study participants?
How were results analysed and presented?
Was the approach to data analysis sound?
To what extent do the results and discussion provide insights into the research question?
What were the key findings? Are they consistent with the results and evidence provided?
Have limitations been acknowledged?
<i>According to the researchers, what is the significance of their findings?</i>
Do the findings challenge existing knowledge or extend our current understanding in relation to the topic?
What is the significance/relevance of this research to my area of interest?

Table 1: Questions to guide your reading
(adapted from the following sources: Williams, 2009; Greenhalgh, 2006)

Seeking answers to these types of questions as you read will help you to understanding the research on which an article is based. Whether you can find adequate answers to these types of questions as you read will help you to determine the quality of the research, and potential shortcomings.

A framework for critical reading of research articles

Below is a simpler framework which can guide your reading of research articles – *as you read* seek answers to the ‘who, what, why, when, where, how’, ‘so what’ and ‘what next’ questions. If research is well designed and clearly reported, answers to these guiding questions should be apparent when you read the research article.

Category	Simpler questions to guide your reading
Introduction Context/background to the study? Rationale for the study? Goal of the study? Researchers?	What was studied? Who conducted the study?
Theoretical Propositions Hypotheses? Research question/s?	Why was it studied?
Method Who or what was studied? How was the study conducted? How was data measured, recorded and analysed?	Who? What? When? Where? How many? How often?
Results What was found? How is it reported?	What was discovered?
Discussion How have results been interpreted? To what extent are results <i>generalisable</i> ? Do the results provide insights into the research question/s? What is the <i>significance</i> of the results/findings? What are the <i>limitations</i> of the research?	So what? (How are the findings significant?)
Conclusions Can the study be <i>replicated</i> ? What further research is recommended? What is the broader <i>relevance</i> of the research?	What next?

Table 2: Framework for reading research articles

References

- Greenhalgh, T. (2006). *How to read a paper*. (3rd ed.). Malden, Massachusetts: Blackwell Publishing
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