Reading and note-taking for Science students

Need to read a number of texts for non-Science subjects?

Many students are increasingly taking classes outside of their field. Science students sometimes struggle to meet the reading demands of non-specialist subjects.

This flyer provides some study skills and strategies for managing reading and taking notes.

Planning

A first step is to be sure of your reading requirements. Be aware that reading lists and recommended reading guides are provided in most breadth subjects. Before you start your classes, and during the semester, it is important that you dedicate time to reading. Some useful strategies are to:

• Find your recommended reading list.

• Put aside some time to prepare for each tutorial or lecture. A few hours of reading for each class twice a week will ensure that you maintain focus.

• Using a semester-length wall planner*, mark off time when you will concentrate on reading. (*Available at uni bookshop)

• Prepare and organise a 'reading log'. This can be used to calculate the amount of time you have spent reading. It can be useful to reflect on your time management, record what exactly you are reading and whether it is appropriate, as well as a record of achievement.

Feeling 'lost'

If you find that you are reading articles and cannot understand the point of the article, you might need to do some foundational reading. Find some textbooks or books on the subject and read introductory chapters to get a feel for the subject. A time-saving device might also to read online materials; but, be careful, this material is not always appropriate to cite or quote in academic essays.

If you are still feeling lost, you might meet with other students and discuss some of the issues, themes, or ideas raised in required reading. As a final point of call, you could ask you tutor for additional resources or guidance. Remember though that the tutor often sets reading tasks for you to interact and reflect on a text.

Note-taking

As many breadth subjects require students to read widely, it might not be possible to focus intensively on one or two articles. In this case, you may start to fall behind. If you are not fully on top of a subject, it might be because you are not attending to your notes.

Contrary to many students' expectations, reading does not have to be a dry, mechanical process. There are many excellent learning skills tools for taking interesting notes. Educationally, it is worth noting that retention of facts, ideas, and theories are enhanced by regularly reviewing what you've read at different intervals. This varies from person to person. However, it can be said that students often benefit from reading, taking notes, and then reviewing a day or two after, followed by once a week in the following weeks, and then more infrequent periods in the subsequent months.

Note-taking Strategies

There are many popular strategies for note-taking. These include the **SQR3** method, the **Cornell** Method, and the **Coding** Method.

SQR3: (**Survey**, **Question**, **Read**, **Recite**, **Review**)

Using this approach, students see reading in distinct stages. It might seem contrived at first, but this strategy helps in developing good reading habits. First, gain an impression of the text – survey – what is it generally saying? Second, develop questions, or alternatively identify the main thesis/question in the passage. Third, closely read the text, making notes or details. Fourth, recall and recite some of the major points through a written or verbal summary (helpful in study groups). Finally, review your notes and the reading on a regular basis, particularly review the major ideas.
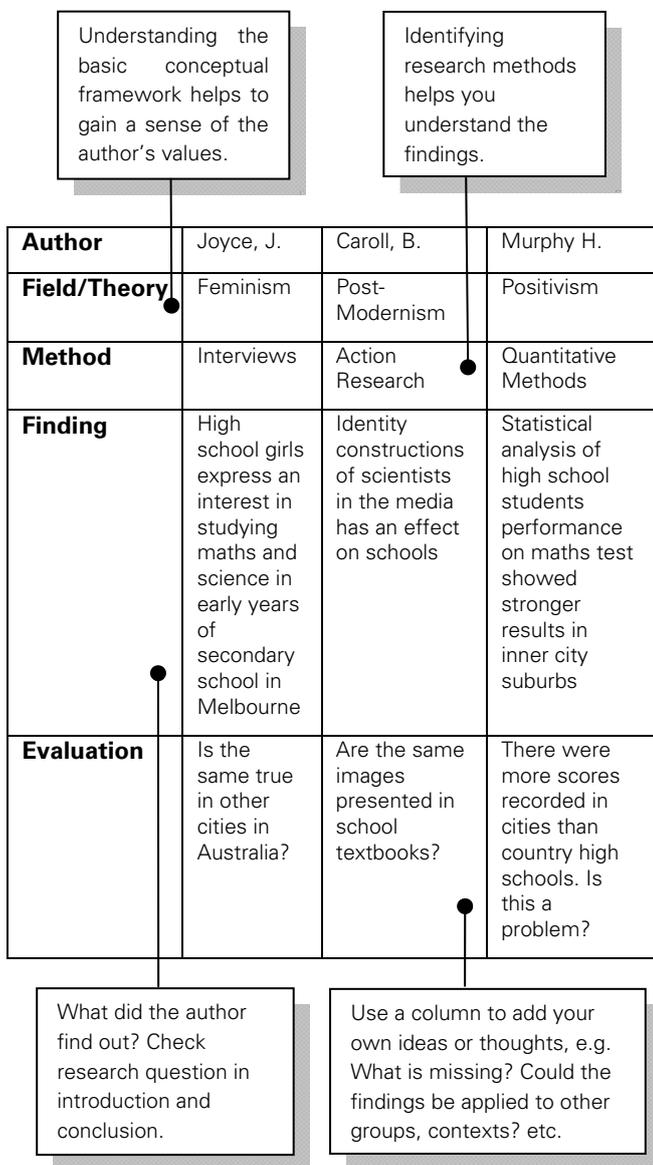
Cornell Method:

This reading approach sees readers divide their page into (usually) three columns. The first column is for **major themes** or ideas. A second column is for more **detailed points** and examples; a final column is for **critical evaluation** of the main ideas in the text. This approach can be done while reading or as part of a review of summary approach. Of course, it is helpful to identify the major points and review regularly.

Coding Method:

A coding method is useful for doing critical evaluations or reviews. By creating a grid (it's helpful to use large paper or computer spreadsheet), visual learners are assisted in being able to make visual connections between research ideas.

E.g.

> Understanding the basic conceptual framework helps to gain a sense of the author's values.

> Identifying research methods helps you understand the findings.

Author	Joyce, J.	Caroll, B.	Murphy H.
Field/Theory	Feminism	Post-Modernism	Positivism
Method	Interviews	Action Research	Quantitative Methods
Finding	High school girls express an interest in studying maths and science in early years of secondary school in Melbourne	Identity constructions of scientists in the media has an effect on schools	Statistical analysis of high school students performance on maths test showed stronger results in inner city suburbs
Evaluation	Is the same true in other cities in Australia?	Are the same images presented in school textbooks?	There were more scores recorded in cities than country high schools. Is this a problem?

> What did the author find out? Check research question in introduction and conclusion.

> Use a column to add your own ideas or thoughts, e.g. What is missing? Could the findings be applied to other groups, contexts? etc.

Additional Tips:

Reading in breadth subjects requires skills in shifting perspectives, information sorting, and attention to detail. It is worthwhile to consider some of the following strategies.

- **Pay attention to key articles that are mentioned by your lecturer/tutor**. These may be mentioned in lectures, in reading lists, or simply in passing. Whenever resources are printed and delivered to students, they have been selected for a reason: usually because the lecturers believe them to be excellent, important articles that are going to make you think.

- **Look for recent articles**. Although many articles may be referred to, the most recent ones are generally those that express contemporary thought on a particular subject. Quite often, important earlier readings may be raised in newer articles, and it is also possible to refer back yourself. Nevertheless, by reducing your reading load to articles that are quite new (say in the past 5 to 10 years), your reading load is likely to be more focused.

- **Use your knowledge of general theories or trends**. As within the sciences, students are required to learn about different fields and debates on particular topics. In social sciences, the situation is no different. Indeed, there is likely to be a number of different debates and it is sometimes hard to gain access. One way is to learn about the major schools of thought in the subject and the general theories behind them. There may be a number of over-arching theories and once you get the hang of them, you have a conceptual framework to work from.

- **Check introductions and conclusions of research papers**. Academic papers often present a research question / topic / problem in the beginning of the paper and answer or provide evidence in the conclusion. This may help you see the argument or main contention(s). If you feel in the dark about the point of an article, see if you can extract a research question from it or summarise the research finding.

- A skill in using a range of articles is to **synthesize this knowledge together and make it your own**. This is fundamentally a creative exercise. Be truthful and report findings faithfully, but also don't be afraid to put your own stamp on what you've read; including statements like '*I found this to be a set of largely unsupported claims*'. Fundamentally, you need to take away an idea or finding from each article you read.

- A further tip in reading is to **think global when you are reading a lot of articles**. Social science reading relies less on remembering formulas and minute details, than looking for global big picture ideas and working from there. Being able to make moderate, informed generalisations about what you read is one step in the process.

- **Critical evaluation** is as much the way you present your ideas as it is about how you approach text. Don't be afraid to ask critical questions of texts.

- **Reading is advanced through practice**. Much like building knowledge in statistics or chemistry, advanced reading takes time and practice.