



Critical thinking

2. Critical reading and note-making

Active reading

In the last unit, we reminded you that your reading should be guided by at least the following three criteria:

- never accept a statement as true merely because someone has said it is true
- never condemn a statement as false unless (a) you can produce rational evidence to support your position and (b) you have a sound reason for attempting to demonstrate its falsity.¹
- always ask questions of the things you are exploring, eg. what if? why? who said?.

These three criteria are the basis of critical reading, they set the scene for sound note-making and they give you an opportunity to adopt sound positions on questions set as assignments.

Reading in preparation for understanding lectures, reading for researching an assignment topic and reading for examination preparation must involve reading critically as well as reading efficiently. Reading can only be critical, however, if it is an active process. This means asking questions about the text, establishing the author's opinion or perspective, and relating this text to other, relevant texts. You might ask whether the article or chapter presents a conflicting or controversial viewpoint, or whether it approaches the topic from a different angle? Your reading should involve two steps: understanding the article or chapter, and critically engaging with the ideas and arguments presented in that article or chapter. Your evaluation allows a response to, and a judgement of, the author's message. Uncritical reading can result in you accepting an argument which may be flawed or biased.



1. Critical thinking: overview



2. Critical reading and note-making



3. Critical writing

Learning objectives

This module will help you to:

- understand the importance and function of critical thinking at university
- develop critical reading skills
- apply critical thinking to your note-making
- structure arguments and include critical analysis in your assignment writing

Asking questions

We have suggested that approaching a text from a critical stance involves asking questions of the text. While the nature of the questions depends partly on your discipline, there are several general questions which you can adapt to your own reading. The following general questions have been adapted from Kirsznner and Mandell's *The Holt Handbook*.

- What is the main message of the article/chapter?
- Are there any sub-messages apparent in the text?
- What is the author's approach/perspective?
- Is there another theoretical or philosophical approach which might have been taken?
- Do you agree with the points the author is making?
- Are the points made by the author supported by evidence?
- Is the evidence anecdotal or is the evidence the result of scientific study/research?



Excerpt 3 (from an academic journal)

The value systems of individuals and of societies can be said to have dominant temporal focuses. Societies in which hospital sickness and other disasters are seen as visited upon the individual by angry gods, spirits, or ancestors *hold a dominant temporal focus on the past*. Societies in which causes and consequences are disregarded in favour of immediate gratification and symptom *hold a present temporal focus*. Societies that show considerable anxiety about the implications and consequences of present situations, to experience little anxiety relief at the removal of a symptom, and need to plan and work toward future eventualities *hold a future temporal focus*.

The idea in this first sentence in a Nursing article is most probably informed by research in Sociology or Anthropology. Where is the reference?

Are these the author's ideas presented as fact? The writer here is writing as if his or her interpretation were absolutely the truth, instead of just an interpretation.

Excerpt 4 (from a popular health journal)

Gloom and doom; sadness and madness; melancholy; doldrums; languor; sorrowfulness - depression has many names. Often described as the common cold of psychiatry, depression is a very common problem and, indeed, it is a rare human being that does not feel depressed at some time. There are many different types of depression, with widely differing symptoms. Depression can be **unipolar** (medicalese for 'simple') or **bipolar**. The latter is also known as manic depression and one variant of it is **manic depressive psychosis**. Then there is SADS, or **Seasonal Affective Disorders Syndrome**. There is also PPD (post-partum depression) and endogenous (from within) and reactive depression. This last means you are depressed because that is how you react to something that has happened to you.

The author appears to be linking common feelings of sadness and melancholy with clinical conditions such as bipolar disorder and SADS. Is this factually correct? Is the linking meant to invoke fear in the reader?

Excerpt 5 (from a popular health journal)

The metabolism of tyrosine is dependent on a form of folic acid (biopterin) and NADH (a type of Vitamin B₃) as well as copper and vitamin C. Once tyrosine reaches the neurons, it is quickly converted to norepinephrine. This last, but crucial step, however, needs the presence of an enzyme (tyrosine hydroxylase) at the presynaptic nerve ending. This enzyme has to travel all the way down the axon to get there. So its availability, and therefore the output of norepinephrine to life the depression, depends on the amount of electrical activity along the nerve itself. This electrical activity is stimulated by any form of touch - chiropractic, osteopathy, massage, acupuncture, cuddling, stroking and, of course, sex. **In case you think this is one of the best excuses for sex you've ever read - you're darn right!**

A critical reader of this article would ask why the author has suddenly switched to informal language where one might have expected formal language to continue. Is he/she attempting to first blind the reader with science and then build a personal relationship with the reader? Why?

Sample text with critical reading annotations

Below is a short article on teams and their effectiveness that appeared in a professional journal . While you are reading this article, annotations in the left hand column will prompt you to start you thinking about the type of questions you can ask of you own texts. While you're reading, you should also note the type of language the author uses: there is quite a lot of everyday language and cliches (e.g. *wishful thinking*), and language features which make a text persuasive, such as the use of *we* (the writer has made this text quite personal by including the reader in the discussion), and phrases urging the reader to act (e.g. *abandon our illusion; only by owning up*). What is the effect of this? Do you find the author's argument persuasive? If so, are you persuaded because of the author's choice of language, or because of the strength of her evidence and soundness of her argument?

MYTHS ABOUT TEAMWORK

by Amanda Sinclair

Look at any of the popular strategies for boosting organisational performance and you will find that using teams is in there somewhere. Better quality teamwork is seen as crucial to organisational effectiveness. But **wishful thinking** has jeopardised our capacity to create it. **Aggressively marketed** organisational solutions have overstated the healing properties and success rate of teams. The evidence about their effectiveness is nowhere near so clear-cut.

Of course, no-one wants to advertise the failures - the time and resources wasted in teams which are the vehicles for personal agendas or where they deteriorate into exercises for avoiding accountability. Even worse are the teams that tyrannise their members and severely impair individual work capacity. They can have high fall-out costs in personal and bottom-line terms.

The most important requirement in making teams work is to abandon our illusions, to scrutinise and learn from past mistakes. Only by owning up will we be able to evaluate what teams do best and how. Only then will we have a good chance of designing and participating in teams that work.

There are five common illusions about teams.

Illusion 1: Teams can do anything

Lingering from the 1960s and 1970s infatuation with human relations is the illusion that teams can do anything. **The reality is** that teams do some things very well and some things badly. Prospective team builders need to take a cold, hard look at what they really want a team to do. If it is to **cover tracks**, **bury** an issue under interminable meetings or **give an appearance** of consultation, then forget it.

Teams are not magic. They must have tasks that are achievable within a specified time frame. The team charged with 'management' has an impossible brief and will surely fail unless effort is spent spelling out what the management task involves and what constitutes success.

Neither are teams a cheap option. They inevitably consume resources and time. Teams rarely resolve conflict. More often, they pressure-cook it.

What is the author's thesis/ main argument?

At first glance would you agree? Why?

What appears to be her attitude to the topic?

What is the main point of this paragraph?

Why is this point positioned here in the text?

What does it indicate about the rest of the article?

Why do you think the author opens the paragraph in this way? Is this paragraph an important part of her argument? Why?

Why would she use the term illusions? Could you think of another term which would be appropriate?

Why does the author use these highlighted terms?

What does it indicate about her opinion?

What evidence is the author using to support her argument?

Is there evidence to support this?

Would you accept this as fact? Why?

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If an individual has the skills to do the job with the requisite creativity, then the individual, not the team, should do the job.

Is this the author's opinion or fact?

Teams should only be considered where there is a widely agreed case for their use. Teams are excellent devices for sharing skills and information creatively and they can coordinate big projects if the right people are team members.

What is the writer emphasising here?

Team tasks should also be relevant to present and future interests and skills of team members. If you want people to be committed to a team then it should have a personal career pay-off and not be seen as an onerous duty.

Can you summarise the main point from this first illusion?

Is there enough evidence to prove it?

Illusion 2: Good teams are purely task-oriented

A second illusion is that good teams focus only on the task. Teams are there to get a job done. However, their existence as a group means that they have an emotional agenda as well as a task agenda. They have a life-cycle and momentum which determines when and under what circumstances the group will be likely to perform best and when it is vulnerable

to diversion or disruption. The emotional agenda is as powerful, if not more so, in determining how well the group does its job. Teams need understanding of the emotional events that help and hinder performance, such as turnover or membership or lack of leadership.

They also need to experience achievement. An open-ended existence or indeterminate task can be offset by designing opportunities for feedback, ritual events and reporting schedules which enhance, not thwart, the team's momentum.

Do you agree or disagree? Why?

Illusion 3: Teams don't need leaders

A third illusion is that leaders are not necessary in good teams. Leadership is back in fashion. But people in teams often argue that good teamwork makes leadership redundant. Explicit or strong leadership behaviour is seen as contrary to the notional equality of teams.

Who says leadership is back in fashion?

Is this assumed knowledge with one discipline of Management?

This illusion and the lack of leadership it produces is one of the worst things that can happen to a team. It ensures an obsession with internal power relations and a team without a champion. **A leader is the team's link with the wider organisation and the vital conduit for resources, support and credibility.** Teams need help to understand how their leadership requirements change and how to make the most of the leadership resources distributed among members.

This point is stated as fact. What theory is it based on?

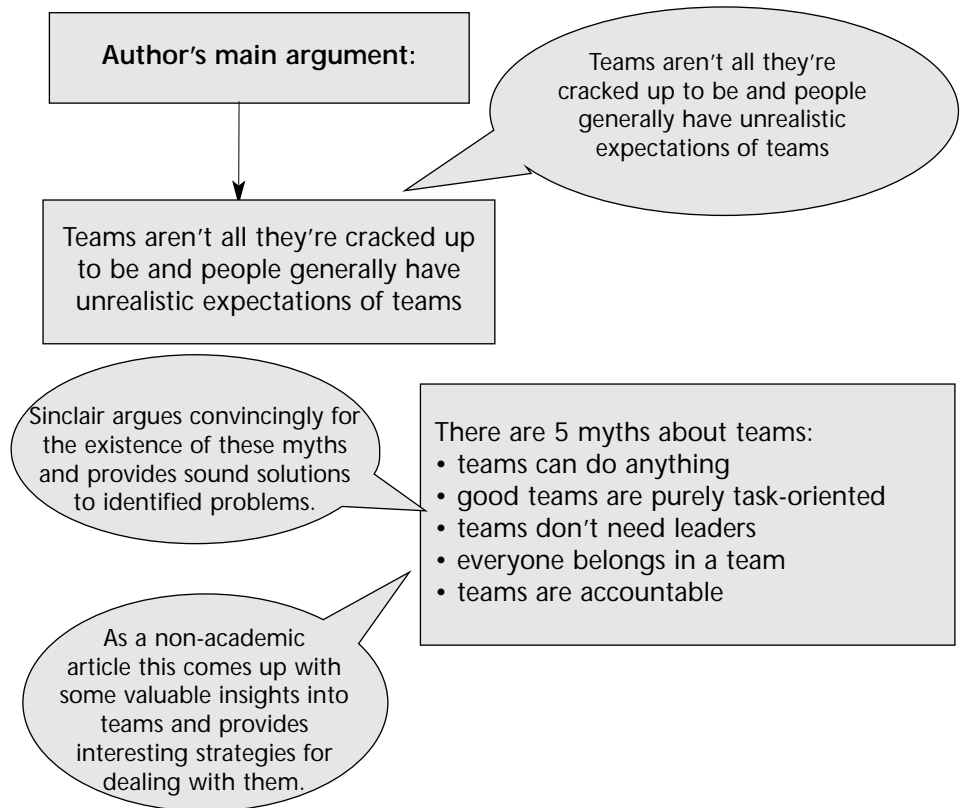
Do you agree with it?

Illusion 4: Everyone belongs in a team

Another illusory belief is that everyone can find a productive role and that, with enough skill building, people can play many different roles, depending upon what is required. This is to deny all the psychological evidence that many personality types do their best work alone.

Alternatively, you may choose to use different coloured pens when formulating your notes: one colour for a summary of contents, while another colour can be used to your note your critical response to a reading. Annotations can be added to photocopies similar to the annotations on the article about teamwork. The important practice to develop is to include a critical perspective in your note-making. Otherwise your notes are simply a regurgitation of the reading, and lack any engagement on your part with the material.

An example of a reader's critical response to the article presented above might look something like this:



To understand more about using mind maps, you might like to visit the following web site: <http://www.tsd.jcu.edu.au/netshare/learn/mindmap/>

The next unit in this module on critical thinking focuses on critical thinking and assignment writing.

EXERCISES

The following excerpts have been adapted from an article appearing in Scientific American.¹ Each sentence has been numbered. Critically read the excerpts and then try the exercises:

1. Near galactic centres, stars are moving so rapidly that they would fly off unless the gravity of a huge mass – up to the equivalent of a billion suns - held them in. 2. Whatever has this mass must be extremely dense. 3. Theorists know of no alternative to a black hole. 4. Many galactic centres and binary - star systems spew radiation and matter at gargantuan rates. 5. They must contain an extraordinary efficient mechanism for generating energy. 6. In theory the most efficient engine possible is a black hole.²

Task 1 Do you think these excerpts prove the existence of black holes?

Task 2 Determine the status of each sentence. Can the sentence be accepted as:

- an observation
- an hypothesis
- evidence for the existence of black holes

Task 3

Critically read the following text:

In a recent study³ of Australian trout, biologists found that the trout quickly learnt to distinguish between coloured containers to recognise which colour contained food. The biologists are hopeful that they can use this information to develop control programs for the European carp which is currently causing such devastation in Australian waterways.

Analyse the quality of reasoning and the methodology of the experiment as described in this text. What critical comments can you make about the research as it is reported in the excerpt?

Key

Task 1

No. The existence of black holes is not proven by these excerpts. Instead the writer of the article argued that:

All this evidence proves only the existence of some kind of compact body. It does not positively identify black holes based on any of their unique characteristics; the deduction of a hole comes by default ... In binary systems the identification is especially ambiguous because astronomers know of another compact body with some of the same properties as a hole: the neutron star. It too is an extreme form of matter –compressed by gravity to colossal densities ... A central problem in the study of black holes is to discover how to tell them from neutron stars.⁴

Task 2

Sentence 1	The first part of the sentence finishing with <i>rapidly</i> is observation. The remainder of the sentence is assumption about what would happen (<i>fly off</i>) if the gravity of some hypothetical mass were not present to hold the stars in place.
Sentence 2	hypothesis
Sentence 3	observation
Sentence 4	observation
Sentence 5	observation
Sentence 6	hypothesis

Task 3

- Experiments conducted on trout do not necessarily generalise to other types of fish.

