



## Critical thinking

# Critical reading & note-making

### ACTIVE READING

Most subjects require students to do readings for lectures and tutorials. Your preparatory reading is also an important aspect of developing a critical approach to your studies – that is, developing critical thinking.

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.

### 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 Kirszner 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?
- Is the evidence referenced? Is it recent?
- Does the writer present opinion as fact?
- Does the writer use valid reasoning?
- Does the writer oversimplify complex ideas?
- Does the writer make unsupported generalisations?
- Does the writer make reasonable inferences?
- Does the writer represent the ideas of others accurately? Fairly?
- Does the writer distort the ideas of others or present them out of context?
- Does the writer use unfair persuasion tactics such as appeals to prejudice or fear?
- Does the writer present a balanced picture of the issue?
- How would you characterise the writer's tone? How does the tone affect your response to the text?
- Does the writer's language, tone, or choice of examples reveal any biases? If so, do the writer's biases reduce his or her credibility?

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### ACADEMIC LITERACY

- Do your reactions reveal biases in your own thinking?
- Does the text challenge your own values, beliefs, and assumptions?
- Does the tone of the article or chapter affect your response to the message of the text? (does it make you feel cynical, critical, emotive, reserved etc)
- Have your own biases affected your response to the text?
- Are statistics, graphs, illustrations etc, adequately introduced and discussed and do they contribute to the author's argument?

There are further questions you want to ask when reading research articles. The following list has been adapted from the *Journal of Construction Engineering and Management*, (1992), Vol 18, pp 1-2.

- Is the topic applicable to your discipline?
- Can the article be understood without reference to anything else?
- Is there a single focus to the paper?
- Is the objective of the research clearly stated?
- Is new information presented in the paper?
- Is the content believable?
- Is the relationship to other papers clearly expressed?
- Are the assumptions clear to the reader?
- Are the limitations of the procedures clear?
- Is the methodology valid?
- Are the results consistent with the objectives?
- Are the results verifiable?
- Are the claims of the author supported?
- Are the diagrams clear to the reader?
- Are the conclusions appropriate?
- Are the references appropriate?

Once you have understood the content of an article or chapter, you can adapt these questions to suit your critical appraisal of the text. You may choose to make notes in the form of answers to these questions, or draw a mind map of your critical response to the article. Your notes can be used as a discussion starter in tutorials to see if others responded to the article or chapter in a similar way. Your critical notes on an article will also be invaluable for assignment or examination preparation for which a critical approach to material is required. Finally, constantly considering questions like those above when you are reading will help you develop a critical approach to your work, and your critical thinking abilities. Look at the journal article excerpts below. The annotations give some idea about how to respond to such material.

### EXCERPT 1 (FROM AN ACADEMIC JOURNAL)

The aim of the study was to describe how patients perceive involvement in decisions concerning their own treatment and nursing care.

#### Sample

A convenience sample of 12 patients was selected from three mixed-sex medical wards. The only criterion for inclusion in the study was a willingness to participate.

*Is the methodology valid here? Critical readers would question whether the sample size was big enough to fulfil the aim of this study.*

*They would also question whether the sample was representative enough of the wider population, as the criterion for inclusion in the perhaps created an unrepresentative group. The personality type that is willing to participate in a study of this kind may suggest subjects that are already highly involved in patient participation, thus skewing the survey results.*



## EXCERPT 2 (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.*

## SAMPLE TEXT WITH CRITICAL READING ANNOTATIONS

Below is a short passage on teams and their effectiveness that appeared in a professional journal. While you are reading this passage, annotations in the right 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 (eg *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 (eg *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?

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 positioned 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.

*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 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?*



### 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.

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

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.

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 payoff and not be seen as an onerous duty.

### 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.

...

*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?*

*Is this the author's opinion or fact?*

*What is the writer emphasising here?*

*Can you summarise the main point from this first illusion?*

*Is there enough evidence to prove it?*

*Do you agree or disagree? Why?*

## NOTE-MAKING

The note-making process should include critical thinking. We have suggested that you engage with your text by asking a series of critical questions of the text. Your responses to these questions can take a number of forms. Mind mapping, webbing or simply using connecting lines to illustrate the relationship between ideas in your notes, are techniques which some students find useful.

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 pdfs or printed copies 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.



## EXERCISES

The following excerpts have been adapted from an article appearing in *Scientific American* (Lasota, 1999). 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.

### 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 (Carp, 2020):

In a recent study 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. (Lasota, 1999)

### TASK 2

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

### TASK 3

Experiments conducted on trout do not necessarily generalise to other types of fish. The information provided about the methodology is very limited and leaves the reader with a number of questions about the size of sample, conditions under which the experiment was conducted, control of variables etc. Without this information, the reader needs to be wary of the claim that trout can distinguish colour. Other variables, such as the influence of smell, may have assisted the trout to distinguish the correct container.

## REFERENCES

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