



The Free School

An introduction to principles
of critical thinking.

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Objective

This presentation synthesizes the academic literature to define critical thinking. My discussion:

- Explores core scholarly principles of critical thinking practices;
- Uses examples to explain the different degrees of support that a scholar may express towards an issue or opinion.

This presentation centers on three scenarios where a person may need to show evidence of critical thinking in their scholarly work:

- Writing a college or scholarship application essay;
- Preparing an answer for a test such as the GRE exam;
- Preparing an assessment for a college or university subject.

What is critical thinking?

“Critical thinking is the ability to think clearly and rationally about what to do or what to believe. It includes the ability to engage in reflective and independent thinking. Someone with critical thinking skills is able to do the following:

- understand the logical connections between ideas
- identify, construct and evaluate arguments
- detect inconsistencies and common mistakes in reasoning
- solve problems systematically
- identify the relevance and importance of ideas
- reflect on the justification of one's own beliefs and values.”

Critical thinking definition (continued)

Further to the previous slide which cites Hong Kong University (2017), there are two main types of applied critical thinking activities that you may engage in:

- (1) Writing critically, such as when you compose an essay;
- (2) Speaking critically, such as when you orate to an audience.

You may also read or listen to discussion put forward by others in writing or in person and reflect critically on these works.

Constantly question evidence

Critical thinkers should constantly question the quality of evidence that they use to support their argument. They should also question the quality of arguments put forward by others and the evidence that others cite. You should consider issues such as:

- Has the data been collected and analyzed by persons with relevant qualifications and experience in that field?
- What is the date of publication? Is the evidence current or is it out-of-date?
- What is the motive of those who put forward an opinion? Are they neutral respected scholars or are they biased persons who have a conflict-of-interest?
- What research methods were used to collect and analyse data? Are these methods appropriate, or are they partially or severely flawed?
- What language was used to draft the original manuscript? Were qualified translators used? Have any details been lost or corrupted during the translation?

The types of issues that you need to consider will vary depending on the context.

Think critically: read widely and compare

Who is the author of this slideshow? What are his/her qualifications and experience? Does this presentation advise others that this is a peer-reviewed scholarly work? What were his/her motivations for writing this presentation? Are the arguments in this presentation orthodox or unorthodox? What evidence causes you to draw this conclusion?

There are numerous websites that aim to define ‘critical thinking’ that have been authored by globally respected colleges/universities. You are advised to read these websites and draw your own conclusions.

This presentation by the University of Tennessee (2017) is recommended. See the section that discusses Wade’s (1995) definition of critical thinking. How many factors does Wade (1995) argue define ‘critical thinking’ skills? What are these factors? Do you agree with this list? Why or why not?

Critical thinking requires your opinion

Thinking, writing and speaking critically requires you to form an opinion on a subject matter. These opinions mostly fall into one of two types:

1. Assessing something as positive or negative;
2. Agreeing or disagreeing with a statement of fact or another person's viewpoint.

More than just an opinion

When you think critically, you form a special type of opinion.

There are two main ways in which you can express an opinion:

1. Informing others of your own opinion on a topic without reference to the opinion of others on the same topic.
2. Stating whether you agree with the opinion of one or more persons on a particular topic.

Critical thinking requires you to offer your audience an **informed opinion**.
Critical thinking requires you to carefully analyse and weigh up all available evidence that is relevant to your opinion.

Examples of ‘positive’ opinions

1. “Adele Adkins is a talented recording artist.”

Evidence: “Adele has won ten Grammy Awards. These accolades show that her peers rate her vocal performances as world-class”.

Supporting reference: Encyclopaedia Britannica (2017).

2. “Marie Curie’s excellence as a scientist has been recognized at the highest level.”

Evidence: “Marie Curie was awarded a Nobel Prize in Physics in 1903.”

Supporting reference: Nobel Prize Organization (2017).

Examples of negative opinions

“Asbestos is a dangerous substance. It is can be lethal for a worker to be exposed to asbestos fumes.”

Evidence: “Oncological medical research confirms this argument.”

Supporting reference: Fasola *et al.* (2007).

“Monaco is among the most expensive cities in the world to live.”

Evidence: “In 2016, The Telegraph ranked Monaco the world’s most expensive city, citing floor space rates of USD\$1 million per 17 square feet.”

Supporting reference: The Telegraph (2016).

Example of 'agree' opinions

“My research confirms that Einstein’s Theory of Relativity is correct. I likewise conclude that $E=MC^2$.”

Reference to Einstein’s original work: Einstein & Rosen (1935)

“I concur with Adam Smith, that an ‘invisible hand’ manages a free-market, capitalist economy.”

Reference: Smith (1937)[1776]

Examples of 'disagree' opinions

“I reject the argument that it is socially acceptable to smoke in public spaces. Independent research shows that exposure to secondhand smoke can cause cancer.”

Supporting reference: Smith & Malone (2006)

“I am deeply sceptical of market research data that is collected from an observer that is visible to consumers. Such research may be flawed, because many consumers may modify their behaviour in response to the presence of the market researcher.”

Supporting reference: Jaworski (1988)

‘Simple’ like/dislike opinions

Opinions that totally like or totally dislike something are the most common and straightforward examples of personal opinions. They are also the most extreme opinions. The diagram below shows how these opinions are polar opposites.

Anne is very passionate
about chemical engineering

neutral

Robin has **no interest**
in chemical engineering

‘Simple’ agree/disagree opinions

Opinions that totally agree or totally disagree about something are the most common and straightforward examples of supporting opinions. They are also the most extreme opinions. The diagram below shows how these opinions are polar opposites.

Robin concurs with scientists who
argue that global warming is a problem

neutral

Anne **rejects** climate
change science

A 'simple' opinion is usually sufficient

If you are required to write a college admission essay, a scholarship application essay or a Bachelor level assessment, in most cases it is sufficient to adopt a 'simple' agree, disagree or neutral stance in your paper, so long as you defend your argument with relevant evidence.

As a general rule, those who review an essay in these three scenarios do not expect the author of an essay to explore some of the 'advanced' opinions that are examined in the final section of this presentation.

In many cases, a person's true opinion toward a topic or issue is an agree, disagree or neutral position. This reality provides a dominant explanation for why an examiner will not automatically reject one of these three standpoints if you write convincingly and support your discussion with relevant evidence and offer appropriate illustration examples.

College/university assessments

As a general rule, you are expected to think and write critically when you prepare a university assessment in any discipline.

In most cases, the assessment question will not explicitly request you to use “critical thinking” skills for written or oral assessment.

The following expressions that you may see in an assessment question are suggestive of the need to think and speak/write in a critical manner:

“Argue a case that explains your position on ...”

“Use evidence to support your assertions.”

“Evaluate the advantages and disadvantages of...”

“Explain your interpretation of [a scholarly principle or theory]...”

“Justify your position on this topic with reference to relevant examples.”

College assessment example

Valencia College (2017)

“College Assessment of Academic Proficiency Critical Thinking Test

The CAAP Critical Thinking Test is a 32-item, 40-minute test that measures students’ skills at analyzing, evaluating, and extending arguments. An argument is defined as a sequence of statements that includes a claim that one of the statements, the conclusion, follows from the other statements. The Critical Thinking Test consists of four passages that are representative of the the kinds of issues commonly encountered in a postsecondary curriculum.”

College assessment example

This essay requires you to **consider** the broader issues associated with the education of students with dyslexia and learning difficulties. Your task is to **address** the following question:

“What are the educational needs of students with dyslexia and learning difficulties?”

Completing this task involves **reflecting** on relevant professional expectations and legal obligations in relation to the education of students with dyslexia and learning difficulties. Your essay should include a **discussion** on the nature and impacts of dyslexia and learning difficulties. You are encouraged to communicate your views, **informed by relevant literature**, in a **persuasive manner**. Your essay should follow a **logical structure**, including an introduction, a body, a conclusion, and a list of **scholarly references**.

Adapted from University of Tasmania (2015, p. 10)

College admission essay: examples

The vast majority of college application essays require you to discuss personal issues such as your intellectual passions, work experience and prior achievements.

You should aim to write critically when you answer a college essay.

Example 1: Stanford University (2017) . This question commences with an argument. Stanford students possess an intellectual vitality. **Reflect on** an idea or experience that has been important to your intellectual development.

Example 2: Stanford University (2017)

Describe a problem you've solved or a problem you'd like to solve. It can be an intellectual challenge, a research query, an ethical dilemma - anything that is of personal importance, no matter the scale. **Explain** its significance to you and what steps you took or could be taken to **identify a solution**.

Scholarship application essay examples

University of Hawai‘i (2017)

“Complete an essay that explains how your course of study and post-graduate plans benefit the agriculture industry in the State of Hawai‘i.”

“Complete an essay that describes your participation in activities related to making a difference or contributing to sustainability, religion, ethics, business, politics, art and culture.”

“Complete an essay describing your commitment to the restoration Hawai‘i’s native ecosystems, including the follow-up process that ensures success.”

GRE's discussion of critical thinking skills

The GRE exam assesses two core critical thinking skills “Analytic and Synthetic.”

“Analytic Skills:

evaluating evidence and its use, including evaluating the evidence itself and evaluating it in light of its larger context, its relevance to the argument, appropriateness of sources, possibilities of bias and the degree of support the evidence lends to the claims made in the argument analyzing and evaluating arguments, including understanding or assessing the structure of the argument independent of the evidence offered, such as identifying stated and unstated premises, conclusions and intermediate steps understanding the language of argumentation and recognizing linguistic cues distinguishing between valid and invalid arguments, including recognizing structural flaws that may be present in an invalid argument (e.g., “holes” in reasoning)”

GRE's discussion of critical thinking skills

“Synthetic Skills:

- understanding implications and consequences, including identifying unstated conclusions or implications and consequences that go beyond the original argument
- developing arguments that are valid, i.e., exhibiting good reasoning and sound, i.e., built on strong evidence

In addition, some questions may, as part of assessing analytic or synthetic skills, also assess skills in evaluating claims or drawing conclusions pertaining to causation or explanation.” (ETS, 2017)

Graduate Record Examination (GRE) example

“In surveys Mason City residents rank water sports (swimming, boating and fishing) among their favorite recreational activities. The Mason River flowing through the city is rarely used for these pursuits, however, and the city park department devotes little of its budget to maintaining riverside recreational facilities. For years there have been complaints from residents about the quality of the river's water and the river's smell. In response, the state has recently announced plans to clean up Mason River. Use of the river for water sports is therefore sure to increase. The city government should for that reason devote more money in this year's budget to riverside recreational facilities.

Write a response in which you examine the stated and/or unstated assumptions of the argument. Be sure to explain how the argument depends on the assumptions and what the implications are if the assumptions prove unwarranted.”

Source: ETS (2017)

Which opinion should I support?

Examiners do not expect you to argue that you agree/like, disagree/dislike or are neutral towards a topic or a matter of opinion. These four guidelines may assist you to decide which standpoint to take when you respond to an essay question:

1. Choose the standpoint that is easiest to answer. The availability of evidence may guide you if you choose to adopt this option.
2. **Be honest - argue what you truly believe.**
3. Argue the opinion that you suspect aligns with the values and mandate of the sponsor, who may be a college or scholarship financier.
4. Choose the standpoint that you know the most about.

follow your **heart**



I argue that you should aim to write from the heart and defend the values and ideas that are yours. If these clash with the sponsor, then you might not wish to be a student of that institution. An essay that is honest is more likely to be distinguished and be received favourably by your audience. A fake argument may appear 'plastic'.

You may choose to end your reading here.

College and scholarship applications are mostly prepared by those who have not completed post-secondary studies at degree level.

For those who are applying for a Bachelor Degree course or an undergraduate scholarship may opt to skip the following six slides and read the references slides at the end of this presentation.

The following six slides are intended for those who are applying for graduate school, a graduate scholarship and for others who are interested in reading advanced discussion about critical thinking.

Advanced descriptions of opinions

Those who plan to write an essay for a graduate research program such as a PhD scholarship application may consider arguing beyond the 'simple' agree, disagree and neutral options.

It is possible to write a flawless essay by arguing that you agree, disagree or are neutral. The next few slides are included for advanced writers that feel limited by restricting themselves to three options.

If you totally agree or totally disagree with an opinion, then you are stating that there is no relevant evidence worthy of discussion that contradicts your opinion. A neutral opinion suggests that you believe that the 'for' and 'against' arguments outweigh each other. In some cases, you may find that you cannot argue your opinion by selecting one of these three options.

The gravity of an opinion

A person's opinion can be measured by degree. I argue that there five elementary scenarios that may describe the **gravity** of a person's attitudes towards a thing:

1. Total support
2. Partial support
3. Neutral - does not support or reject
4. Partial rejection
5. Total rejection

The continuum below shows the relationship between these five opinions.

Total
support

Partial
support

neutral

Partial
rejection

Total
rejection

Advanced descriptions of gravity

This continuum diagram shows a more advanced classification system. There are 7 different stances that you take when you express the degree of your opinion.

Total
support

Partial
support

neutral

Partial
rejection

Total
rejection



Mostly support



Mostly reject

Mostly agree and mostly disagree arguments

If you argue that you mostly agree with a certain opinion, then the number/weight of arguments that you offer to support your opinion must exceed the number/weight of opposing arguments that you discuss. If you mostly agree, then you must discuss at least one opposite argument.

If you argue that you mostly disagree with a certain opinion, then the number/weight of arguments that you offer to support your opinion must exceed the number/weight of opposing arguments that you discuss. If you mostly disagree, then you must discuss at least one opposite argument.

Diverse opinions are welcome, so long as you cite relevant evidence and examples to support your argument.



Barbie
totally agrees



Ken
mostly agrees



Lisa
totally
disagrees



**Bart argues
that the
evidence is
inconclusive.**

**Discuss this statement: “The Concorde
supersonic jet had an excellent safety record.”**

Other 'advanced' types of opinions

There are other opinions you may argue in an essay. For example you may:

Reject the premise of the question.

Essay question example: "Europe has the best collection of classical oil paintings in the world. Discuss the historical reasons that explain this observation". It is possibly that you do not agree with the premise of this question and you may reject this assumption in your essay. Consult others and think carefully if you opt to challenge the premise of an essay question.

Argue that there is absent or inconclusive evidence to support an opinion. For example, if an essay asks if you agree that the core of the Earth is composed mercury - you may opt to argue that you have no opinion on this issue. This is because no scientist has ever collected physical data from the Earth's core. All opinions are therefore merely speculative.

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To cite this presentation: Jericho, J. (2017), An introduction to principles of critical thinking, Sydney, Australia: The Free School.

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