Critical Thinking
Library HITS – Writing & Research Skills

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Before we begin...

- Use the paper and pencil provided to Draw A Scientist.

- We will collect these later.
Learning Objectives

• Recognise the characteristics of critical thinking

• Consider how to develop critical thinking

• Understand how to structure and build up arguments

• Apply critical thinking to your reading
A TCD Graduate Attribute

To Act Responsibly
A Trinity Graduate
- Acts on the basis of knowledge and understanding
- Is self-motivated and able to take responsibility
- Knows how to deal with ambiguity
- Is an effective participant in teams
- Has a global perspective
- Is ethically aware

To Think Independently
A Trinity Graduate
- Has a deep knowledge of an academic discipline
- Can do independent research
- Thinks creatively
- Thinks critically
- Appreciates knowledge beyond their chosen field
- Analyses and syntheses evidence

To Develop Continuously
A Trinity Graduate
- Has a passion to continue learning
- Builds and maintains career readiness
- Commits to personal development through reflection
- Has the confidence to take measured risks
- Is capable of adapting to change

To Communicate Effectively
A Trinity Graduate
- Can present work through all media
- Is expert in the communication tools of a discipline
- Connects with people
- Listens, persuades and collaborates
- Has digital skills
- Has language skills
Check Your Assumptions

If a plane crashed on the border between Northern Ireland and the Republic, where would the survivors be buried?

At a party, you meet a woman who can predict perfectly the score of any match, in any sport, before it is played. How is this possible?

From Bransford, J.D. & Stein, B.S. (1984)
What is Critical Thinking?

Critical thinking involves subjecting an idea, fact, theory, model or information to scrutiny and rigour rather than just accepting it at face value.

Sceptical attitude

Rational evaluation of available evidence
https://www.youtube.com/watch?v=aElxjO9DEtY

Bloom's Digital Taxonomy

What is it and what does it mean to me?
**Blooms Taxonomy**

**Knowledge**
- Recall of information;
- Discovery; Observation;
- Listing; Locating; Naming

**Comprehension**
- Understanding; Translating;
- Summarising; Demonstrating;
- Discussing

**Application**
- Using and applying knowledge;
- Using problem solving methods;
- Manipulating; Designing; Experimenting

**Analysis**
- Identifying and analyzing patterns;
- Organisation of ideas;
- Recognizing trends

**Synthesis**
- Using old concepts to create new ideas;
- Design and Invention; Composing; Imagining;
- Inferring; Modifying; Predicting; Combining

**Evaluation**
- Assessing theories; Comparison of ideas;
- Evaluating outcomes; Solving; Judging;
- Recommending; Rating

**Diagram:**
- Pyramid structure with levels from Knowledge to Evaluation.
<table>
<thead>
<tr>
<th>Bloom’s Taxonomy &amp; Goldilocks</th>
<th>From Maguire, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creating</strong></td>
<td>Write a story about Goldilocks and the Three Fish. How would it differ from Goldilocks and the Three Bears?</td>
</tr>
<tr>
<td><strong>Evaluating</strong></td>
<td>Judge whether Goldilocks was good or bad. Defend your opinion.</td>
</tr>
<tr>
<td><strong>Analyzing</strong></td>
<td>Compare this story to reality. What events could not really happen?</td>
</tr>
<tr>
<td><strong>Applying</strong></td>
<td>Demonstrate what Goldilocks would use if she came to your house.</td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td>Explain why Goldilocks liked Baby Bear’s chair the best.</td>
</tr>
<tr>
<td><strong>Remembering</strong></td>
<td>List the items used by Goldilocks while she was in the Bears’ house.</td>
</tr>
</tbody>
</table>
Grading

F
Little Factual Content & Errors

III
Knowledge Facts, but little insight
Narrow/ **No critical thought**
Poorly written / incoherent

II.II
Solid Answer
Knowledge beyond lectures
Good on facts
Writing good, some structure

Grading Table:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Between</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>70%</td>
</tr>
<tr>
<td>II.1</td>
<td>Two-One</td>
</tr>
<tr>
<td>II.2</td>
<td>Two-Two</td>
</tr>
<tr>
<td>III</td>
<td>Third</td>
</tr>
<tr>
<td>F1*</td>
<td>Fail</td>
</tr>
<tr>
<td>F2*</td>
<td>Fail</td>
</tr>
<tr>
<td>NS†</td>
<td>Non-Satisfactory</td>
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</tbody>
</table>

II.1

Good grasp of subject

**Critical & Analytical thinking**

Logical Clear Presentation

Nearly all key points

Thorough, **deep understanding**

**Critical thinking**, insight, creativity

Well written

All points acknowledged
What’s wrong with this statement?

“As expected, I'm far from impressed with the government's empty, pointless obesity strategy. It's clear they don't know what to do and are incapable of any vision.”

Jamie Oliver ‘This obesity strategy is a cop out’. The Guardian, October 2011
https://www.theguardian.com/commentisfree/2011/oct/13/obesity-strategy-jamie-oliver

As expected = bias
Empty, pointless = value judgements
“Simply telling people what they already know – that they need to eat less and move more – is a complete cop out. The country's bill of health is shocking, and it's not going to get any better over the next 30 years if a clearly-defined plan isn't put into place soon. We simply can't afford the financial or health costs of doing nothing.”

The country's bill of health is shocking = colloquial language
Where is the evidence? No source provided
1. Am I looking at valid and reliable sources?

2. Am I presenting a balanced view on the subject and looking at all evidence to build up my argument or is my point of view biased or skewed?

3. Is the argument I am presenting reasonable and is there evidence to support it?

4. Is there any bias or ambiguity in the language used which could influence or prejudice people?
Get into the habit of questioning

- What?
- Why?
- What evidence?
- Do you agree?
To engage in academic debate you must examine the weight of evidence for and against any argument.

"While doing the research, keep in mind there are only two kinds of facts... those that support my position... and inconclusive."
https://www.youtube.com/watch?v=AkwWcHekMdo
Student's Wikipedia hoax quote used worldwide in newspaper obituaries

Genevieve Carbery

Wed, May 6, 2009. 01:00

A WIKIPEDIA hoax by a 22-year-old Dublin student resulted in a fake quote being published in newspaper obituaries around the world.

The quote was attributed to French composer Maurice Jarre who died at the end of March.

It was posted on the online encyclopedia shortly after his death and later appeared in obituaries published in the Guardian, the London Independent, on the BBC Music Magazine website and in Indian and Australian newspapers.

“One could say my life itself has been one long soundtrack. Music was my life, music brought me to life, and music is how I will be remembered long after I leave this life. When I die there will be a final waltz playing in my head, that only I can hear,” Jarre was quoted as saying.

However, these words were not uttered by the Oscar-winning composer but written by Shane Fitzgerald, a final-year undergraduate student studying sociology and economics at University College Dublin.

Mr Fitzgerald said he placed the quote on the website as an experiment when doing research on globalisation.

He wanted to show how journalists use the internet as a primary source and how people are connected especially through the internet, he said.

He picked Wikipedia because it was something a lot of journalists look at and it can be edited by anyone, he told The Irish Times.
Check your facts

If you are not sure about a story you have read or some comments online, check out one of these sources to see if the story has been reported in the "main stream media."

Irish Newspapers Archives Digital archive of over six million Irish national, regional and historical newspapers

Irish Times A full-text newspaper article database containing articles published in the Irish Times from 1995 to present. Full-text articles only, excludes images

Lexis Nexis UK An international, reliable news source

Proquest Historical Newspapers The New York Times (1851-); The Times of India (1861-); Chinese Newspaper Collection (1832-)
‘We are not allowed to give our own opinions, are we?’

Your initial thoughts

+ analysis of and reference to theories, evidence, data, examples, case studies, principles and counter arguments

+ more of your thought

= ✓ critical thinking
What is this about?
What is the context / situation?
What is the main point / problem / topic to be explored?
Where does it take place?
Who is involved?
Who is affected?
Who might be interested?
When does this occur?

Why this argument / theory / suggestion / solution?
Why not something else?
Why did this occur?
Why was that done?
How does one factor affect another?
How do the parts fit into the whole?
How does it work In theory? In practice? / context?

What if this were wrong?
What are the alternatives?
What if there were a problem?
What if this or that factor were - added? - altered? - removed?

So what am I saying about this? Why?
Is it successful / convincing?
So what does this mean?
So what is the point / underlying issue / implication of this? In what way is this significant?
What can be learnt from it?
What needs doing / considering now?
Is it transferable?
Where else could it be applied (and how)?
1. Identify the thrust of the information

First, identify the general thrust of the argument within the information you are reading. At this stage you are simply trying to define and be aware of the subject matter.

Try to identify the:

• main points of the argument
• claims being made
• evidence used
• conclusions reached
2. Analyse the material

As you read, think about whether or not the material is relevant to your needs.

Some questions that might help in your analysis:

• Does the information make sense in relation to other theories and research?
• Where in the broader picture does this particular argument sit?
• How old is the material?
• Is the material clear or do you need to find additional information to aid your understanding?
• Can you identify any implications that might require you to look for other material? (Perhaps complementary explanations of a phenomenon if the original material is not comprehensive enough)
3. Compare and apply information

Assignment questions will often ask you to apply theories, principles or formulae to situations. The process of trying to apply what you are learning can help you to build your understanding of the subject.

Try looking for:
• the implications of one piece of information for another
• weaknesses that might be revealed when you apply the idea to a real-life situation
• a lack of coverage. Does the theory or formula only go so far and do you need to draw upon another theory or principle to complete your understanding of something?
Bowlby’s theory of attachment showed that ‘the infant and young child should experience a warm, intimate and continuous relationship with his mother or mother substitute.’ (1982 p11). Rutter (1981) found ‘the child is more likely to develop deviant behaviour’ (p18) . . .

Critical writing 4: Quote hopping! Tell us why the quote is important

Bowlby’s theory of attachment showed that ‘the infant and young child should experience a warm, intimate and continuous relationship with his mother or mother substitute’ (1982 p11). Rutter (1981) found ‘the child is more likely to develop deviant behaviour’ (p18) …

For your redraft: Do some thinking. Explain the differences between these writers in your own words. Too many quotes makes your writing disjointed, and the reader can’t see what interests you in the discussion. Cut down on the quotes drastically.

In his theory of attachment, Bowlby (1982) stressed the importance of a ‘warm, intimate and continuous’ relationship (p11) with an adult. He did not insist that this should be the mother—could be a ‘mother substitute’. This is important in any discussion of the role of parents and carers in the development of young children … Rutter (1981) focused on what happens when this relationship is disrupted … Neither argued that the mother should be the exclusive carer …

A critical thinker will draw sources together, linking them to their interest and discussion. They will only quote key, special words, and then comment, making sure that their own voice comes through.

A tutor might think: where are you going with this? You hop from quote to quote describing what each writer says. Don’t be nervous about summarising and commenting on theories and findings. Your voice is missing.

In her first draft Eva hadn’t shown what interests her in this debate: the roles of mother and carer.

Summary and comment.

A glimpse of Eva’s argument …
Synthesis linking two sources.
Eva’s focus, Eva’s voice

Model to generate critical thinking

Description

Topic / Issue

What?
When?
Who?
Where?
Why?

What if?
So What?
What next?

Analysis

Evaluation

Learning Development  University of Plymouth
Further Resources

Available as e-book in the library

Student Learning & Development

Study Skills
This section deals with the skills you can develop to improve the way you study.

- Critical Thinking
- Note making
- Reading
- Memory
- Study Groups
References


