

Critical Thinking

Module code: ECGE4005P

Student Number : 2205231

Introduction

Critical thinking is a vital component in the **problem-solving cycle**. When faced with new information or a problem, thinking critically is essential to finding the solution. As shared by Dwyer (2017), these techniques are not only important in education but also in everyday life, where decision-making and problem-solving are requirements. Made up of many important skills, critical thinking can include: **logical reasoning (induction, deduction, and abduction)**, **critical analysis/research**, and **creativity**. Cottrell (2019) describes critical thinking as an unprejudiced, fair, methodical investigation.

Thinking critically possesses a plethora of benefits. The ability to negate the bias of information is vital in understanding and creating arguments. As shared by Cottrell (2019), it promotes curiosity and open-mindedness that gives us the confidence to challenge the predispositions of ourselves and those around us. Analysing existing literature equips us with the ability to pursue our own solutions and conclusions, along with focusing on the task at hand. It allows us to self-reflect; to ensure that we are making the right decisions in both our studies and in our personal lives.

Logical Reasoning

Logical reasoning is the initial reaction to a new problem; it is the first step in thinking critically about an issue. We frequently find ourselves getting factual information flawed with opinion, this leads to misunderstanding and disinformation.

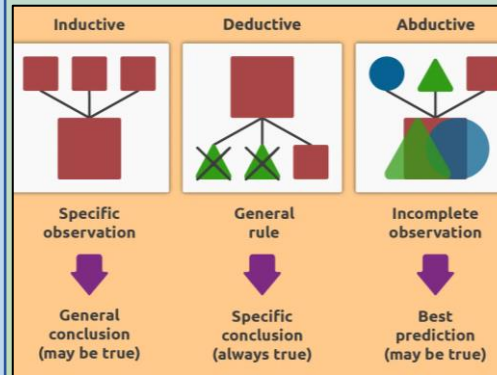
As described by Nardi (2017), logical reasoning permits us to look at what seems to be factual and examine it, steering the creation of established knowledge. **Deduction, Induction, and Abduction** are means to the term logical reasoning. A deductive argument is where we apply the overall knowledge that we have already acquired to something completely new. It is based on established facts. Conversely, Inductive reasoning is the opposite, utilising the specific experience of a situation or problem, and applying it to a general scope. Abductive reasoning is the utilisation of minimal evidence, allowing one's self to predict the most probable solution. Every Deductive statement is binary and will always end with an objective conclusion (Rodrigues, 2011). Although, as supported by Kelley (2013), every inductive argument is measured by the strength of evidential support. The more evidence that you find to support your argument, the more likely it is to finish with a probable conclusion.

To summarise, Rodrigues (2011, p.137) phrases this as, "Deduction proves that something must be; Induction shows that something actually is operative; Abduction merely suggests that something may be."

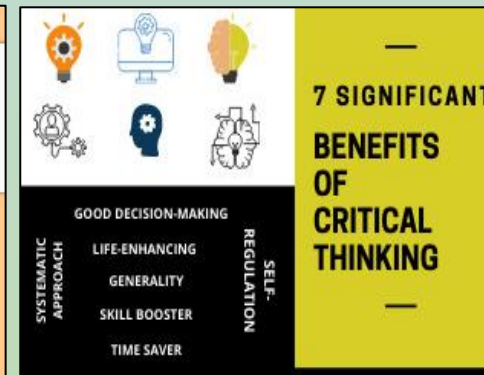
Critical Analysis

Being capable of analysing a specific problem, text, or data-set is a crucial part of thinking critically. When using resources, we must always make sure that they are: **relevant, up-to-date, reputable**, and if they are **subjective** or **fair**. This is why critical analysis is significant in an educational setting. If a source is not relevant, it can potentially **weaken** and **distract** from your argument (Chatfield, 2018; Cottrell, 2019).

As supported by Cottrell (2019), when looking for a supporting argument, it is particularly important to check when that statement was written or published as out-of-date information may have been **disproven** since. Whilst researching relevant literature, it is important that the source is supported by other **knowledgeable scholars** within the topic's field. This links the examination of the source and author, revealing any **potential bias** within their argument. Best said by Chatfield (2018), a biased source alters your understanding via the author's purposeful **one-dimensional insinuation**. Utilizing these techniques, an argument can be cross-referenced, employing **multiple reinforcing sources**.



(Source: Research Gaps, 2022)



(Source: Vaishali, No Date)

Conclusion

To conclude, the utilisation of these combined skills, under critical thinking, come together to create the highest order of intellectual **problem-solving**. They are crucial weapons in our problem-solving arsenal and are constantly in use. These skills strengthen our **curiosity, open-mindedness, and creativity** which in turn allow us to explore every problem solving avenue before arriving at a conclusion. As supported by Indeed (2021), it is beneficial to master these skills as they provide infinite opportunities in day-to-day life and academia.

Creativity

Creativity is an important characteristic for critical thinkers to possess, as a potential solution may be novel. As implied by Harber (2020), creativity is entwined with the **scientific method**, this is when new ideas/solutions are considered and tested, even those that frequently fall outside the usual means.

Greatly explained by Cohen (2015), being logical is of great use in certain predicaments, although being emotionally in tune is beneficial for far more. When using creativity, a person has to be prepared to **take risks, ask questions, and lose arguments**. It is a learning curve that is of immense reward. As shared by Cottrell (2019), the inability to think creatively reduces one's capability in testing the authenticity and bias of your argument or your analyses.

Just like many of the other critical thinking skills, thinking creatively doesn't only benefit students academically but is also beneficial in everyday life, for example, employers may see creativity as a method for problem-solving. As written by Adair (2007), looking at life creatively may give us endless opportunities, allowing us to see every new scenario in an optimistic manner.



(Source: TSCFM, 2022)

Reference List

Adair, J. (2007) *The Art of Creative Thinking How to be Innovative and Develop Great Ideas*. London: Kogan Page.

Baumgartner, M. (2019) '5 Tips for Color-Coding Your Notes' , *Study.com* [blog]. December 2019. Available at: <https://study.com/blog/5-tips-for-color-coding-your-notes.html>. (Accessed: 25th October 2022).

Burns, M. (2021) *In the flow: Striking a Balance Between Challenging and Motivating Students*. Available at: <https://www.thelearningcounsel.com/article/flow-striking-balance-between-challenging-and-motivating-students#:~:text=By%20engaging%20in%20an%20appropriate,they've%20never%20seen%20before>. (Accessed: 25th October 2022).

Chatfield, T. (2018) *Critical thinking : your guide to effective argument, successful analysis & independent study*. 1st Edn. Los Angeles: Sage.

Cohen, M. (2015) *Critical thinking skills for dummies*. Chichester: Wiley.

Cottrell, S. (2019) *The Study Skills Handbook*. 5th Edn. London: Macmillan International Higher Education/Red Globe Press, an imprint of Springer Nature Limited.

Dwyer, C.P. (2017) *Critical thinking: conceptual perspectives and practical guidelines*. Cambridge: Cambridge University Press.

Haber, J. (2020) *Critical thinking*. Cambridge, Massachusetts: The MIT Press.

Indeed (2021) *Critical Thinking examples (And why they're important)*. Available at: <https://uk.indeed.com/career-advice/career-development/critical-thinking-examples> (Accessed: 22nd October 2022).

Kelley, D. (2013) *The art of reasoning: An introduction to logic and critical thinking*. WW Norton & Company.

Mehta, K.C., And Pitchers, R. (2018) '*The significance of effective note taking*', London School of Science & Technology [blog]. 7th June. Available at: <https://www.lsst.ac/blogs/the-significance-of-effective-note-taking/> (Accessed: 25th October 2022).

Nardi, P. (2017) *Critical Thinking : Tools for Evaluating Research*. University of California Press.

Research Gaps (2022) *Inductive Deductive Abductive Reasoning Example*. Available at: <https://www.researchgaps.com/inductive-deductive-abductive-reasoning-example/> (Accessed: 22nd October 2022).

Rodrigues, C.T. (2011) *The method of scientific discovery in Peirce's philosophy: Deduction, induction, and abduction*. *Logica Universalis*, 5(1), pp.127-164.

Thadomal Shahani Centre For Management (2022) *The Benefits of Critical Thinking & How to develop it*. Available at: <https://tscfm.org/blogs/the-benefits-of-critical-thinking-for-students/> (Accessed: 22nd October 2022).

UTS University (2022) *How to write critically*. Available at: <https://www.uts.edu.au/current-students/support/helps/self-help-resources/academic-skills/how-write-critically> (Accessed: 14th October 2022).

Vaishali, S. (No date) 'Top 7 Benefits Of Critical Thinking In Life', *Grasp Learn and Grow* [blog]. Available at: <https://learnfromblogs.com/top-7-benefits-of-critical-thinking-in-life> (Accessed: 22nd October 2022).