Critical Thinking

What is it?

Critical thinking is 'purposeful, reasoned, and goal-directed thinking… it is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions' (Halpern, 1998). Critical thinking involves interpreting information in a systematic and objective manner by considering its validity, results and relevance.

Employers value individuals who are able to plan and organise, approach a problem systematically, and think critically, while considering the consequences of a range of choices. Graduates who are adept at critical appraisal skills make better workplace decisions.

Students who possess critical appraisal skills can:

- Swiftly identify the goal of the appraisal (this may require analysing a problem);
- Ensure adequate information is available;
- Determine the validity of the results of their research;
- Formulate inferences from the results of their research;
- Determine the relevance (applicability) of the information; and
- Make decisions in relation to their goal.

How can students learn to think critically?

Critical thinking skills need to be explicitly taught, practised and assessed in units in every course. Below are some ways to embed development of critical thinking skills in your unit:

Teach students how to critique and evaluate research to assess whether it possesses validity (i.e. is it close to the truth) and applicability (i.e. is it useful);

- Use Problem-Based Learning (PBL). This approach involves teaching methodologies that develop a student's knowledge, abilities, and skills through working on authentic (work-based) problems
- When setting problem-solving challenges, encourage students to evaluate their chosen solutions and to identify alternative approaches
- Teach students problem solving and identification strategies so that they are able to spot opportunities or potential problems before they occur (and are able to solve problems if they arise
- Offer students who submit a personal work plan, before an assignment is due, an extra 5% in order to value the process of planning

- Teach students how to support their conclusions with reasoned arguments and evidence, in both written and verbal communication
- Encourage the development of students' critical reasoning skills by requiring them to argue different sides of an issue in written work or class discussion
- Deliberately give students conflicting or ambiguous information or perspectives to think through (remember to let students know that this is a deliberate strategy to encourage their critical thinking)
- Challenge students to analyse their own, or a peer's, writing. Have them highlight examples of critical thinking concepts such as bias, validity, applicability, evidence (or lack thereof), inference and errors in reasoning

How can critical thinking be assessed?

When developing critical thinking skills, it is important to make sure you provide clear criteria for assessing critical thinking skills so that students know what is expected. Assess student work against the criteria students were trying to reach as well as authentic criteria for real work in your discipline.

Within a rubric, critical thinking criteria could include things such as;

- analysis of key information
- logical and objective interpretation of information in various forms (charts, data, statements etc.)
- justification of various ideas and opinions presented
- rating and ranking activities that involve giving rationales for decisions

Self and peer evaluation activities are a great way to assess critical thinking. This can be extended to having students create their own rubrics, either individually or in groups, and then explain/justify their rubric as well as apply them to specific items.

The assessment of activities that involve lively discussion/debate, Socratic dialogues, analysing and defending conflicting perspectives of an argument can highlight the importance and development of critical thinking skills.

Good practice examples

Many universities recognise the importance of critical thinking and have provided resources and good practice examples. Links to some of these can be found below.

UNSW Critical Thinking Skills Page

Critical Thinking

https://student.unsw.edu.au/critical-thinking

Deakin Critical Thinking Website

http://www.deakin.edu.au/__data/assets/pdf_file/0012/51222/critical-thinking.pdf

References

Critical and Creative Thinking. (n.d.). Retrieved March 4, 2018 from

https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/critical-and-creative-thinking/