

Critical Thinking

Deriving the Definition

Increasingly, Critical Thinking skills are being recognised and valued in educational and work settings and in subjects across the science-humanities divide. This has led to a high demand for tests and assessments to measure and acknowledge these skills. Over time, the range and nature of these assessments have grown and evolved, resulting in the need for a common and explicit working conception and definition of the domain of Critical Thinking.

Perceptions of Critical Thinking (CT) are highly varied and not always based on an informed understanding of the identity and nature of the discipline. This is hardly surprising since academic perceptions and definitions are multitudinous. There is also much discussion about what skills lie inside the domain of CT, and what skills lie outside.

Cambridge Assessment has completed review and synthesis work to create a definition which is able to: guide development work on new specifications; describe the domain being tested in existing qualifications; and have academic underpinning.

The Cambridge Assessment definition of Critical Thinking

Critical Thinking is the analytical thinking which underlies all rational discourse and enquiry. It is characterised by a meticulous and rigorous approach.

As an academic discipline, it is unique in that it explicitly focuses on the processes involved in being rational.

These processes include:

- analysing arguments
- judging the relevance and significance of information
- evaluating claims, inferences, arguments and explanations
- constructing clear and coherent arguments
- forming well-reasoned judgements and decisions.

Being rational also requires an open-minded yet critical approach to one's own thinking as well as that of others.

This definition strongly relates Critical Thinking with rationality. All rational discourse and enquiry involve the activity and application of CT, and both formal and informal rational discourse and enquiry rely upon analytical and reasoned thought. Many of the processes of CT rest upon the ability to be analytical; to be able to dissect arguments and information. Good critical thinking is exemplified when the thinking is rigorous and meticulous, that is to say it is not passive, automatic, spontaneous or reactive in manner, but is active, careful and thorough. The reference to CT as an academic discipline acknowledges that it is a skill which can be explicitly and purposefully taught and learnt. The value of the discipline is that it can be applied in all contexts in which reasoning occurs or should occur. Open-mindedness is also important, since being able to set aside one's views is a pre-requisite for a fair examination of others' arguments. Furthermore, open-mindedness allows a person to acknowledge that their own views may be unsupported or even wrong.

The definition indicates that CT is a set of skills which one applies not only to other people's reasoning, but also to one's own. Being rational requires analysis, evaluation and elucidation of one's own thinking, with the aim of greater accuracy in one's own reasoning.

The taxonomy below describes the skills and subskills of Critical Thinking.

Taxonomy in brief	
Skill/process	Subskill/sub-process
1 Analysis	A Recognising and using the basic terminology of reasoning.
	B Recognising arguments and explanations
	C Recognising different types of reasoning
	D Dissecting an argument
	E Categorising the component parts of an argument and identifying its structure
	F Identifying unstated assumptions
	G Clarifying meaning
2 Evaluation	A Judging relevance
	B Judging sufficiency
	C Judging significance
	D Assessing credibility
	E Assessing plausibility
	F Assessing analogies
	G Detecting errors in reasoning
	H Assessing the soundness of reasoning within an argument
	I Considering the impact of further evidence upon an argument
3 Inference	A Considering the implications of claims, points of view, principles, hypotheses and suppositions.
	B Drawing appropriate conclusions
4 Synthesis/ construction	A Selecting material relevant to an argument
	B Constructing a coherent and relevant argument or counter-argument.
	C Taking arguments further
	D Forming well-reasoned judgements
	E Responding to dilemmas
	F Making and justifying rational decisions
5 Self-reflection and self-correction	A Questioning one's own pre-conceptions
	B Careful and persistent evaluation of one's own reasoning

Context of research

Since 2006 Cambridge Assessment has undertaken a programme of research focussed on Critical Thinking. The work began with the development of the definition and taxonomy. Cambridge Assessment drew upon the expertise of leading figures in the field in order to derive this definition. Research was conducted into the impact of CT in schools and this included teachers' experiences and perceptions. Interestingly, in an additional study there was evidence to suggest that taking CT AS level is associated with higher achievement in other A levels. The Critical Thinking research programme will culminate with the publication of a glossary of terms. This will provide a source of reference for commonly used terms in the CT domain, for use by students, teachers, academics and professionals.

Further information

Full details of the Critical Thinking work by Cambridge Assessment are available at:

www.cambridgeassessment.org.uk

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