Questions for Critical Thinking

Purpose

For facilitators, supervisors, lecturers and mentors.

Below is a list of question types that serve different academic and research purposes:

1. Comprehension
2. Application
3. Analysis
4. Synthesis
5. Evaluation
6. Deduction
7. Induction
8. Adduction
9. Refutation
10. Balanced thinking
11. Multiple perspective-taking
12. Causal Reasoning
13. Ethical reasoning
14. Creative thinking

See Bloom's taxonomy of educational objectives:
http://www.learningandteaching.info/learning/bloomtax.htm/

If the group is having difficulty formulating questions, ask them to download this handout to use as a prompt. Have fun with it – the facilitator can designate different question purposes to each participant and they have to formulate a question about the text they are reading. Or individuals can use it as a way of developing their questioning skills.

Source:

Cuseo, J. (nd). Classification of critical thinking skills. *Questions that promote critical thinking.* OnCourse Workshop. Retrieved from http://www.oncourseworkshop.com/Learning030.htm.

Examples of questions for critical thinking

1. Comprehension

To convert information into a form that is p**ersonally meaningful**, i.e. that *makes sense* to the *individual* who is learning it.

Examples:

• How would you put ____ into your own words?	Paraphrasing
• What would be an example of _____?	Illustrating
• How would you translate ____ into visual form?	Concept-Mapping

2. Application

To apply *abstract* or *theoretical* principles to **concrete**, **practical** situations.

Examples:

• How can you make use of ____?
• How could ____ be put into practice?
• How would ____ be converted into an action plan?

3. Analysis

To **break down** or **dissect** information into its *parts* in order to detect the relationship among the parts, or the relationship between the parts and the whole (for example, identifying the underlying causes or sources of disagreement during a class discussion).

Examples:

• What are the most important/significant ideas or elements of ____?	Prioritization
• What assumptions/biases underlie or are hidden within ____?	Deconstruction
• What parts of _____ would be similar to/different than _____?	Comparison and Contrast

4. Synthesis

To **build up** or **connect** separate pieces of information to form a larger, more coherent pattern. (Examples: Connecting related ideas discussed in separate sections or units of a course into a single product such as a concept map. Integrating ethical concepts learned in philosophy with marketing concepts learned in a business course to produce a set of ethical guidelines for business marketing and advertising practices.)

Examples:

• How can this idea be combined with _____ to create a more compete or comprehensive understanding of ____?	Integration
• How could these different ideas be grouped together into a more general category?	Classification
• How could these separate ____ be reorganized or rearranged to produce a more comprehensive understanding of the "big picture?"	Reordering

5. Evaluation

To *critically* **judge** the validity (truth), morality (ethics), or aesthetic (artistic) value of ideas, data, or products by using relevant assessment criteria (standards for judging quality).

Examples:

• How would you judge the accuracy or validity of _____?
• How would you evaluate the ethical (moral) implications or consequences of _____?
• How would you rate the aesthetic quality (beauty) of ____?

6. Deduction

To draw conclusions about **particular instances** that are logically consistent with, or derive from general principles and premises.

Examples:

• What specific conclusions can be drawn from this general ____?
• If this general _____ were true, would it follow that _____?
• What particular actions or practices would be consistent with this general ____?

7. Induction

To infer (derive or draw out) well-reasoned **generalisations** or **principles** from individual instances or specific examples (for example identifying recurrent themes or categories that emerge during a class discussion).

Note: One form of induction is the ability to abstract and extrapolate a concept learned in one context and transfer that learning to another context—a cognitive process often referred to as "decontextualization." This capacity to transfer knowledge, to apply a concept learned in one context to contexts different than the one in which the concept was originally learned, is often presumed to be the "litmus test" of whether a student has really (deeply) learned the concept, or has simply memorised it in its original form. (For example, if a student can solve different versions or examples of math problems that require comprehension of the same, underlying mathematical concept, then the student is demonstrating deep learning or critical understanding of that concept.)

Examples:

• What are the broader implications of ____?
• What patterns or themes emerge from ____?
• What can be extrapolated or extended from this particular ____ that may have more general or universal value?

8. Adduction

To make a *case* **for** an argument or position by accumulating *supporting evidence* in the form of logical arguments (*rational* thinking) or research evidence (*empirical* reasoning).

Examples:

• What proof exists for ____?
• What are logical arguments for _____?
• What research evidence supports _____?

9. Refutation

To make a *case* **against** an argument or position by accumulating contradictory evidence in the form of logical arguments (*rational* thinking) or research findings (*empirical* reasoning).

Examples:

• What proof exists that ____ is false?
• What are logical arguments against _____?
• What research evidence contradicts ____?

10. Balanced Thinking

To carefully consider arguments/evidence **for** and **against** a particular position or viewpoint.

Examples:

• What are the strengths/advantages and weaknesses/disadvantages of ____?
• What evidence supports and contradicts ____?
• What are arguments for and counterarguments against ____?

11. Multiple Perspective-Taking

To view an issue from a variety of **viewpoints**, **standpoints**, or **positions** in order to gain a more *comprehensive* and *holistic* understanding.

Examples:

• How would people from different ethnic or racial groups view this ____?
• How would people from different socioeconomic backgrounds be affected by ____?
• How would people who differ in age or gender react to ____?

12. Causal Reasoning

To identify **cause-effect** relationships between different ideas or actions.

Examples:

• How would you explain why _____ occurred?
• What is responsible for ____?
• How would ____ affect or influence ____?

13. Ethical Reasoning

To identify what is **morally right/wrong** or **good/bad** about particular ideas, attitudes or practices.

Examples:

• What does ____say about a person's values?
• What are the moral implications of ____?
• Are the expressed or professed convictions of ____ consistent with actual commitments and observable actions?

14. Creative Thinking

To generate **imaginative** ideas, **unique** perspectives, **innovative** strategies, or **novel (alternative)** approaches to traditional practices.

Note: Although critical and creative thinking have often been seen as separate cognitive skills, the latter is included in this typology, because it involves thought processes that are deeper or higher than memorisation.

Examples:

• What might be a metaphor or analogy for ____?	perspectives
• What could be invented to ____?	products, ideas
• What might happen if ____?	othetical reasoning

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