



Critical Thinking

A journey beyond the classroom

" We should be teaching students how to think. Instead, we are teaching them what to think". Clement and Lockhead, Cognitive Process

Instruction

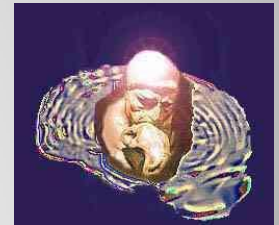
- Critical thinking is thinking that is clear, precise, accurate, relevant, constant and fair
- Critical Thinking is how people approach
 - Problems
 - Questions
 - Issues
- The best way to get to the truth



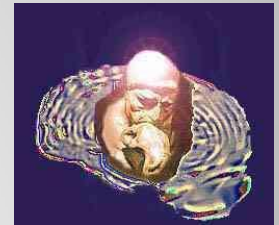
What is Critical Thinking?

Critical Thinking is about life in general...life beyond the classroom

What is Critical Thinking?

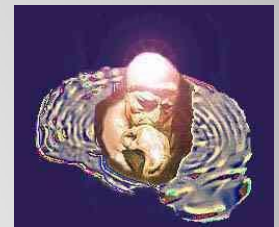


- Critical Thinking is self-directed,
- self-disciplined,
- self-monitored and
- self-corrective thinking that entails effective communication and problem solving abilities



Descriptors of Critical Thinking

- Critical Thinking is a pervasive, purposeful human phenomenon
- Ideal critical thinkers are characterized by how they *approach life and living in general* (the journey outside of the classroom)



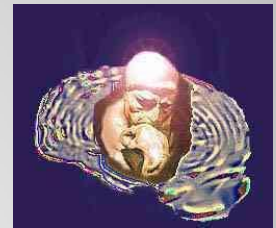
Descriptors of Critical Thinking

- Inquisitiveness about wide range of issues
- Concern to become and stay well-informed
- Alertness to opportunities to use Critical Thinking
- Self confidence in their abilities to reason



Approaches to life of good Critical Thinkers

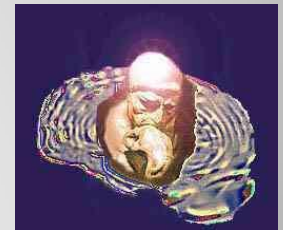
- Open-mindedness about divergent world views
- Flexibility in considering alternatives and opinions
- Understanding the opinions of other people



Approaches to life of good Critical Thinkers

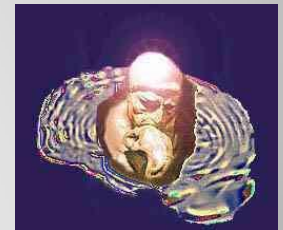
- Fair mindedness in appraising reasoning
- Honesty in facing one's own biases, prejudices, stereotypes, egocentric and ethnocentric tendencies
- Prudence in suspending, making, altering judgments

**Approaches to life of good
Critical Thinkers**

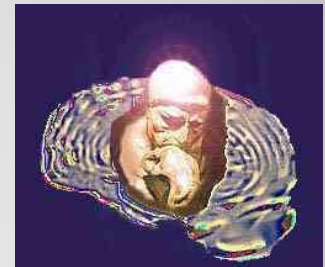


- Willingness to reconsider and revise views
- Clarity in stating question or concern
- Orderliness in working with complexity
- Diligence in seeking relevant information
- Reasonableness in selecting and applying criteria

**Approaches to life of good
Critical Thinkers**



- Care in focusing attention on the concern at hand
- Persistence through difficulties
- Precision to the degree permitted by subject and circumstances.



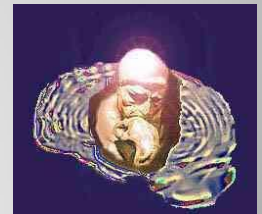
Critical Thinking approaches

- **Six Cognitive Skills**

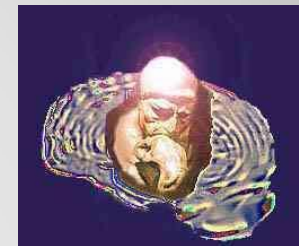
- Interpretation – to understand according to individual belief
- Analysis - examination
- Evaluation – appraise or value
- Inference – to lead to a conclusion
- Explanation- to make clear
- Self-regulation- to put in good order (balance or centered)

- **Affective Dispositions “ a critical spirit”**

Critical Thinking Requires



State Your Problem	Distinguish Your Problem	Information	Analyze and Interpret	Options For Action	Evaluate Your Options	Adopt a strategic approach	Monitor Your Actions



Problem Matrix

**The Quality of
Our Thinking
is Given in the
Quality of Our
Questions**

Conceptual Clarification questions:

You are to think more about what exactly you are asking. Prove your concepts behind argument.

Basic 'tell me more' questions to go deeper into the questions.

- *Why are you saying that?*
- *What exactly does this mean?*
- *How does this relate to what we have been talking about?*
- *What is the nature of...?*
- *Can you give me an example?*
- *Are you saying...or...?*
- *Can you rephrase that, please?*

Socratic Questions

Problem Assumptions...

Think about the presuppositions and unquestioned beliefs of arguments.

- What else could we assume?
- You seem to be assuming?
- How did you choose those assumptions?
- Please explain why/how...?
- How can you verify or disapprove that assumption?
- What would happen if...?
- Do you agree or disagree with...?

Socratic Questions

Probing rationale, reasons and evidence

Dig into reason for argument rather than assuming it is a given.

- *Why is that happening?*
- *How do you know this?*
- *Show me...?*
- *Can you give me an example of that?*
- *What do you think causes?*
- *What is the nature of this?*
- *Are these reasons good enough?*
- *Would it stand in court?*
- *How might it be refuted?*
- *How can I be sure of what you are saying?*

Socratic Questions

Probing rationale, reasons and evidence

Dig into reason for argument rather than assuming it is a given.

- *Why is...happening?*
- *Why? (keep asking it...you'll never get past a few times)*
- *What evidence is there to support what your are saying?*
- *On what authority are you basing your argument?*

Socratic Questions

Questioning viewpoints and perspectives

Attack the position. Show that there are other, equally valid, viewpoints.

- *Another way of looking at this is..., does this reasonable?*
- *What alternatives ways of looking at this are there?*
- *Why it is...necessary?*
- *Who benefits from this?*
- *What is the difference between...and...?*
- *Why is it better than...?*
- *What are the strengths and weakness of ...?*
- *How are...and similar?*
- *What would...say about it?*
- *What if you compared...and...it?*
- *How could you look another way at this?*

Socratic Questions

Probe implications and consequences

Argument may have logical implications that can be forecast. Does these make sense? Are they desirable?

- *Then what would happen?*
- *What are the consequences of that assumption?*
- *How could...be used to...?*
- *What are the implications of ...?*
- *How does...affect...?*
- *How does ...fit with what we learned before?*
- *Why is...important?*
- *What is the best...? Why?*

Socratic Questions

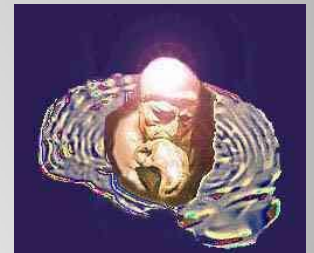
Questions about the question

Bounce the ball back in their court...turning the question against themselves.

- *What was the point of asking that question?*
- *Why do you think I asked this question?*
- *What does that mean?*

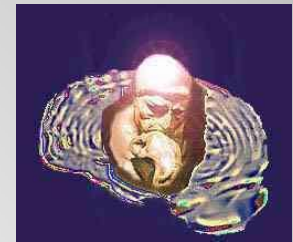
Socratic Questions

1. **Deep questions** drive out thought underneath the surface of things, force us to deal with complexity.
2. Questions of **purpose** force us to define task.
3. Questions of **information** force us to look at our sources of information as well as at the quality of our information.



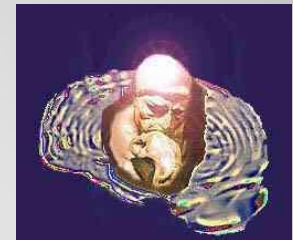
Questions...stimulate Thinking and Learning

4. Questions of **interpretation** force us to examine how we are organizing or giving meaning to information.
5. Questions of **assumption** force us to examine what we are taking for granted.



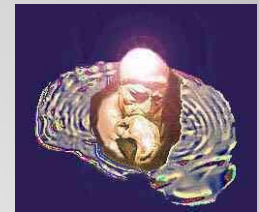
Questions...stimulate Thinking and Learning, continued

4. Questions of **implication** force us to follow out where our thinking is going.
5. Questions of **point of view** force us to examine our point of view and to consider other relevant points of view.



Questions...stimulate Thinking and Learning, continued

8. Questions of **relevance** force us to discriminate what does and what does not bear on a question.
9. Questions of **accuracy** force us to evaluate and test for truth and correctness.
10. Questions of **precision** force us to give details and be specific.



Questions...stimulate Thinking and Learning, continued

11. Questions of **consistency** force us to give details and be specific.
12. Questions of **logic** force us to consider how we are putting the whole of our thought together, to make sure that it all adds up and makes sense within a reasonable system of some kind.



Questions...stimulate Thinking and Learning, continued

- Clarify Your Thinking

- Watch out for the vague, fuzzy, formless, blurred thinking.

- HOW?

- State one point at a time
- Elaborate on what you mean
- Give examples that connect your thoughts to life experience
- Use of analogies and metaphors



Learning the Art of Critical Thinking

- Clarify Your Thinking

- Stick to the point

- Am I focused on the main problem or task?
 - How is this connected? How is that?
 - Does my information directly relate to the problem or task?
 - Where do I need to focus my attention?
 - Are we being diverted to unrelated matters?
 - Am I failing to consider relevant viewpoints?

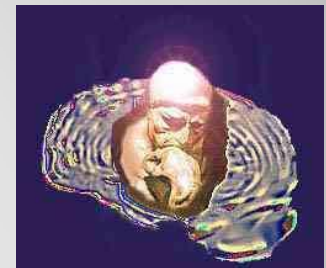
Learning the Art of Critical Thinking



- Clarify Your Thinking

- Stick to the point

- How is your point relevant to the issue we are addressing?
 - What facts are actually going to help us answer the question? What considerations should be set aside?
 - Does this truly bear on the question? How does it connect?



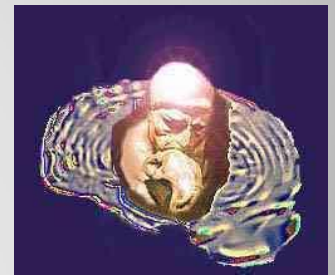
Learning the Art of Critical Thinking

- Clarify Your Thinking

- Questions Questions

- Whenever you don't understand something, ask a question of clarification.
 - Whenever you are dealing with a complex problem, formulate the question you are trying to answer in several different ways (being as precise as you can) until you hit upon the way that best addresses the problem at hand.

Learning the Art of Critical Thinking



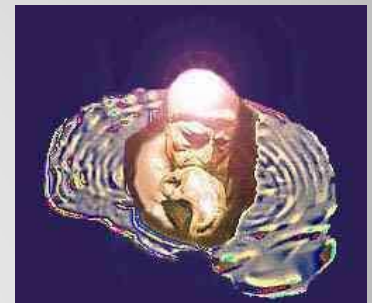
- Clarify Your Thinking

- Questions Questions

- Questions You Can Ask to Discipline Your Thinking?

- What precise question are we trying to answer?
 - Is the best question to ask in this situation?
 - Is there more important question we should be addressing?
 - Does this question capture the real issue we are facing?
 - Is there a question we should answer before we attempt to answer this question?

Learning the Art of Critical Thinking



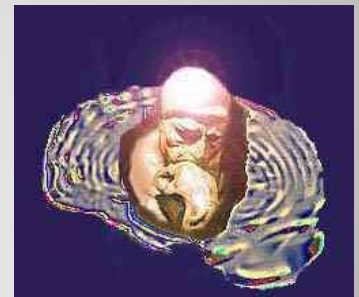
- Clarify Your Thinking

- Questions Questions

- Questions You Can Ask to Discipline Your Thinking?

- What information do we need to answer the question?
 - What conclusions seem justified in light of the facts?
 - What is our point view? Do we need to consider another?
 - Is there another way to look at the question?
 - What are some related questions we need to consider?
 - What type of question is this: an economic question, a political question, a legal question, etc?

Learning the Art of Critical Thinking

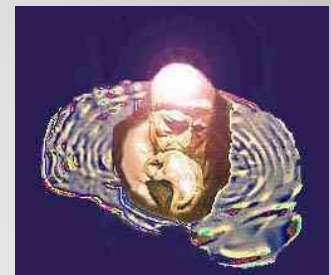


- Clarify Your Thinking

- Be reasonable

- Realize That You are Being Close-Minded If You...
 - Are unwilling to listen to someone's reasons
 - Are irritated by the reasons people give you
 - Become defensive during a discussion
 - After you catch yourself being close-minded, analyze what was going on in your mind by completing these statements:
 - I realize I was being close-minded in this situation because...

Learning the Art of Critical Thinking



- Clarify Your Thinking

- Be reasonable

- After you catch yourself being close-minded, analyze what was going on in your mind by completing these statements:

- The thinking I was trying to hold onto is...

- Thinking that is potentially better is....

- This thinking is better because...

Learning the Art of Critical Thinking

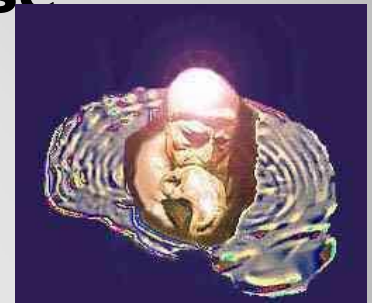


- Clarify Your Thinking

- Questions Questions

- Whenever you plan to discuss an important issue or problem, **write** out in advance the most significant questions you think need to be addressed in the discussion.
 - Be ready to change the main question, but once made clear, help those in the discussion **stick** to the question, making sure the dialogue builds toward an **answer that makes sense**

Learning the Art of Critical Thinking



The manager of a supermarket is attacked in his home. His attackers want him to take money from his own supermarket and deliver it to them. His wife and two children are held hostage, and he is told that they will be harmed if he fails to carry out the orders he has been given.

- *As the manager drives to the supermarket that morning, is he free to choose what he will do?*
- *Should he be morally blamed for taking the money and handing it over?*
- *If he informs the police and his wife or children are harmed as a result, who is to blame for that harm? Does he share the blame with the thieves who actually carried it out, on the grounds that he could have prevented it by following their instructions?*

Freedom of Choice

BEGIN YOUR JOURNEY

A Critical Mind is a Questioning Mind