

College Success

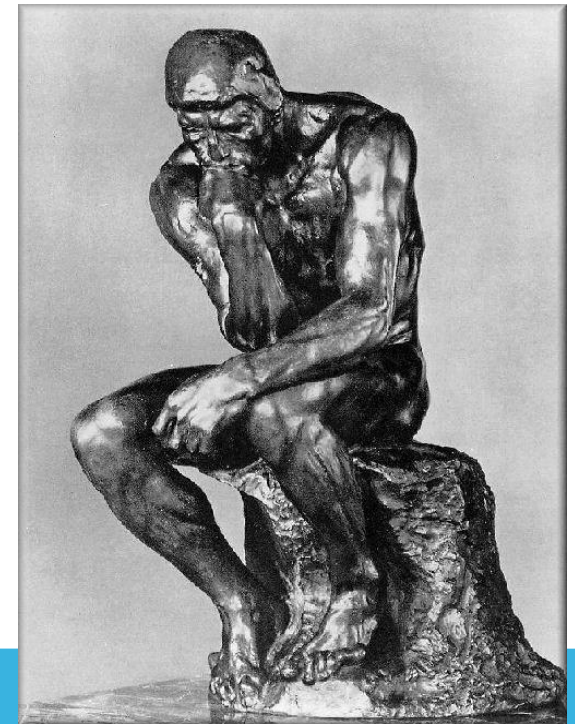
CRITICAL THINKING

Sitting on top of your shoulders
is one of the finest computers
on the earth.

But, like any other muscle in your
body, it needs to be exercised
to work its best.

That exercise is called

THINKING.



The Thinker
sculpted by Auguste Rodin

I think, therefore I am.

- Rene Descartes

WHAT IS CRITICAL THINKING?

Commonly called “problem solving”

Not being content with the first solution to a problem, but thinking more deeply about it.

Knowing, understanding, analyzing, synthesizing, applying and evaluating the idea or problem

Looking for what is implied in a question rather than what is stated

Applying the rules of logic to problem solving

Not letting reason be clouded by emotion

The pathway to truth is paved in light...

FOUR ASPECTS OF CRITICAL THINKING

Abstract Thinking:

thinking past what your senses tell you

Creative Thinking:

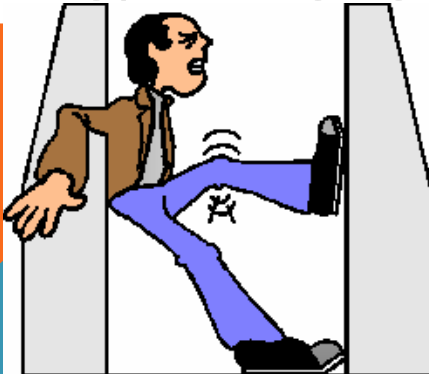
thinking “out of the box,” innovating

Systematic Thinking:

organizing your thoughts into logical steps

Communicative Thinking:

being precise in giving your ideas to others.



Don't let sloppy thinking
put you "in the squeeze"

CRITICAL THINKING: WHAT IS INVOLVED?

Question: what is being asked?

Purpose: why do I want the answer?

Point of View: where do I stand to look at the question?

Information: what data do I have?

Concepts: what ideas are involved?

Assumptions: what am I taking for granted?

Inferences: what conclusions am I drawing?

Consequences: what are the implications of my question?

who?

when?

how?

what?

why?

where?

CRITICAL THINKERS

- Acknowledge personal limitations.
- See problems as exciting challenges.
- Have understanding as a goal.
- Use evidence to make judgments.
- Are interested in others' ideas.
- Are skeptical of extreme views.
- Think before acting.
- Avoid emotionalism
- Keep an open mind

Elementary, my dear thinker...



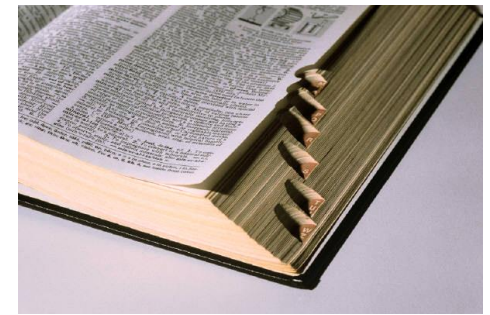
UNCRITICAL THINKERS

- Pretend to know more than they do.
- Get annoyed by problems.
- Are impatient.
- Judge on first impressions and intuition.
- Focus on their own opinions.
- Look only for ideas like their own.
- Are guided by feelings rather than thoughts.
- Claim that thinking gives them a headache.

Don't think
about it,
just sign it!



A THINKER' S LEXICON



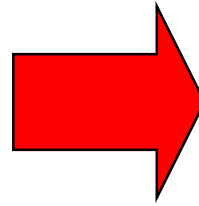
Inference	A judgment based on evidence
Plausible	Logical and believable, credible
Validity	Truthful, well-founded
Claim	To assert as a fact whether it is or not
Fact	A truth that cannot be disputed
Opinion	A personal view or belief
Argument	A set of claims to support an assertion
Assumption	An inference that is believed to be true

INDUCTIVE AND DEDUCTIVE REASONING

Inductive Reasoning

Specific Reasoning

Example: My history class requires a lot of reading



Broad Principles

All college courses have a lot of reading

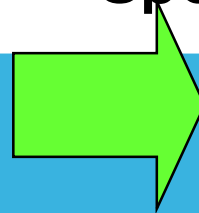
Deductive Reasoning

Broad

Generalizations

Example: All college courses are hard

Specific



Conclusions

My art history course will be hard

THE **IDEAL** METHOD

Identify the problem.

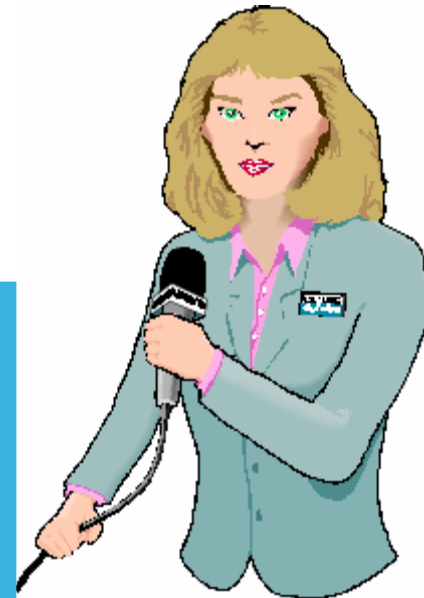
Define the problem.

Explore alternative approaches.

Act on the best strategies.

Look back to evaluate the effects.

**Yes, ladies and gentlemen, it's
IDEAL!**



ASK QUESTIONS



**Yes!
Ask me!**

One quality of a good critical thinker is the ability to ask on-target questions.

If you don't usually ask questions, is it because you

- Fear embarrassment?
- Worry what others will think of you?
- Worry that the instructor will think your question is strange?
- Worry that others will think you're showing off?

When you don't ask questions, you sacrifice *your* education.

If you don't take risks, you won't get the maximum benefit in developing your mind.

THERE'S NO SUCH THING AS A STUPID QUESTION (USUALLY)

- ☞ There are *unwelcome* questions.
- ☞ Don't ask questions that detract from the momentum of the class.
- ☞ Don't ask questions that focus more on self-concerns than on the needs of the class.
- ☞ Don't ask questions that demonstrate you failed to pay attention.
- ☞ Don't ask silly questions.

Can I draw
you a
conclusion?
Well, can I?



OFFER CRITICISM


You will most likely be asked to judge or evaluate issues in college.

First decide whether you like what you are being asked to judge.

Consider both positive and negative attributes.

Use examples to support your judgment.

Don't be intimidated by this kind of assignment; your instructors want you to develop your critical thinking skills.



MAKE THE RIGHT INFERENCES

You are constantly making inferences.

Inferences are interpretations that you derive from processing cues in a situation.

A *plausible* inference is a judgment that is logical, and possibly accurate.

Sometimes inferences become *assumptions*—something we believe to be true and act on as though it were.

Inferences can be tricky. It is easy to be wrong and you may operate on faulty assumptions until you are informed otherwise.

**Your inference shows a
profound grasp of the obvious.**

FOUR COMMON DECISION MAKING PROBLEMS

Snap decisions

- Don't jump to conclusions!

Narrow thinking

- Broaden your vistas!

Sprawling thinking

- Don't beat around the bush!

Fuzzy thinking

Keep it sharp! Keep it relevant!

WHAT IS A CLAIM?

A *claim* is a statement which can be either true or false, but not both.

A claim is an assertion you want to have accepted as a fact and not be disputed.

When evaluating a claim, you have three choices:

- accept the claim
- reject the claim
- suspend judgment until you have more information

What is an Argument?

- An *argument* is a set of claims.
- Arguments begin with *premises* and lead to a conclusion
- A good argument is one in which the premises lead logically to a *strong* or *valid* conclusion.

I'm
stakin'
a claim!



An argument does not have to be angry!

FORM STRONG ARGUMENTS

Be sure the conclusion follows logically from the premises.

Leave out faulty or dubious premises.

Use precise language to pinpoint your claim.

Avoid making claims you can't prove.



**All men from Mars are green.
Gork is from Mars.
Therefore, Gork is green.**

This is a perfectly logical argument (called a syllogism.)

It only has one small problem: NASA hasn't found any green men on Mars. Oh, well...

KNOW YOUR OWN BIASES

Everyone has strong preferences and prejudices that may prevent us from evaluating arguments fairly.

Acknowledging these can increase the likelihood of coming up with more effective arguments.

Good reasoners guard against their own “soft spots” to increase their objectivity.

Be honest with yourself: “Am I opinionated?”

KNOW THYSELF:
the truth shall make you free.

REFINE YOUR REASONING

Be willing to argue

Use deductive reasoning

Check your assumptions

Know your own biases

Observe carefully

Stay positive and persistent

Show concern for accuracy

Take time before concluding

**Be sure to engage brain,
before putting mouth in gear!**

WHAT MAKES A CREATIVE THINKER?

They actively pursue experiences that are aesthetically pleasing.

They enjoy taking a unique approach to things.

They love the process of creating.

They are flexible and like to play with problems.

They take risks and learn from their mistakes.

They strive to evaluate their work fairly.

They thrive when they think of assignment guidelines as a launching point for their imagination.



Da Vinci



Edison

NURTURE YOUR OWN CREATIVITY

Don't accept other people's blueprints.

Be vigilant about what others can't see.

Differentiate the good from the bad.

Take the plunge *before* you're an expert.

Concentrate on the big picture.

Take sensible risks.

Motivate yourself from inside.

Shape environments that will support your creativity.

Actively pursue your creative life.

If you don't grow it, who will?

CRITICAL THINKING: A SKILL TO CARRY YOU THROUGH LIFE

Professors and future employers value your ability to perform these critical thinking skills:

Manage and interpret information

Examine exciting ideas and develop new ones

Pose logical and cogent arguments

Recognize reliable evidence

Be proactive rather than reactive

Think things through in depth.



WHY COLLEGE ENCOURAGES CRITICAL THINKING

Remember:

Thinkers are generally “movers and shakers.”

Sometimes how you solve a problem is as important as the solution.

Open ended questions of “Why?”, “How?” or “What If?” have no simple, clear-cut answers.

There are many valid points of view!

The greatest gift a college can give you is an open mind.

**As blood is to the brain,
thinking is to the mind.**