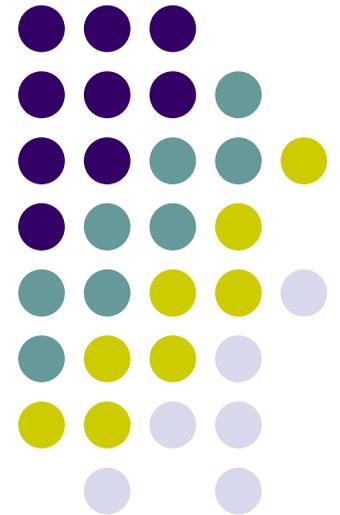


Critical Thinking





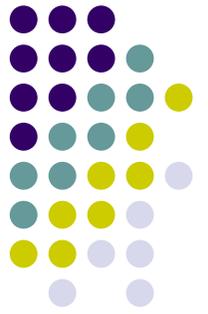
Critical Thinking

- Making reasoned judgment
- **Reasoned** = logical thinking
- **Judging** consists of determining the degree to which a thing meets a **standard or criteria**



Purposes of Critical Thinking

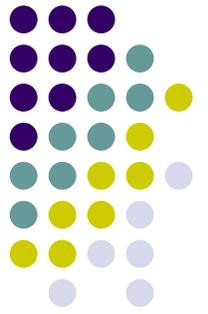
- To ascertain the degree to which some phenomenon meets some **criterion**
- The extent to which it is an **authentic instance (實例)** of a specifically defined phenomenon
- Critical = a **benchmark for judging**



Definition

- Critical thinking is judging the **reasonableness** or soundness and truthfulness of statements
- A conclusion plausible or warranted by the **evidence (證據)**
- Critical thinking is judging the **quality** of anything

Essential Elements of Critical Thinking



- Dispositions (意向)
- Criteria (準則)
- Argument (論證)
- Reasoning (推論)
- Point of view (觀點)
- Procedures for applying criteria and judging



1. Dispositions (意向)

Habitual ways of behaving:

- Skeptical 懷疑
- Fair-minded 公平
- Open-minded 開放
- Respect evidence and reasoning 重視證據
- Respect clarity and precision 論點精確
- Consider different points of view 考慮不同觀點
- Willingly change a position when reason and evidence warrant 改變看法



2. Criteria (準則)

- Criteria are conditions 條件
- Faithful, authentic, benchmarks
- Knowledge of criteria
- Knowing how to create criteria
- Values, standards, definitions, **officially established requirements**, precedents, rules, and test results.



2. Criteria

Accepted standards

- Based on relevant, accurate facts 事實
- Based on credible sources 可信來源
- Precise 精確
- Unbiased 不偏不倚
- Free from logical fallacies 謬誤
- Logically consistent 恆常
- Strongly reasoned



3. Argument (論證)

- A proposition with its supporting evidence and reasoning

A simple argument consists of:

- A **proposition** (assertion, claim, conclusion)
- Facts, principles, **evidence** as reasons in support of the proposition
- **Reasoning** that connects these to each other and to the assertion

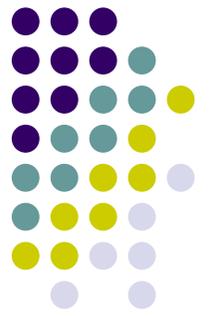


3.1 Example

- Given: doing exercise \longrightarrow fitness (evidence)
- Then, fitness \longrightarrow health (claim)
- Therefore, we do exercise for health (conclusion)

Is this argument valid?

3.2 Counter-claims (反證) and reasons



- **Alternative claims** with evidence and reasoning
- **Qualifiers** stating any conditions that limit the validity of the claim
- To persuade or convince
- Justify the results of our thinking



3.3 Example

- Exercise = fitness?
- Fitness = health?
- What about disadvantages of doing exercise?
- Other factors leading to health?
- Individual differences?



3.4 Strong Argument

- A clear position – no vague or ambiguous words or phrases
- Convincing reasons for the claim
- Counter-claims with convincing reasons
- Relevant, accurate facts
- Qualifiers or any conditions that limit the claim
- A logical order of premises that lead conclusively to the claim



4. Reasoning (推論)

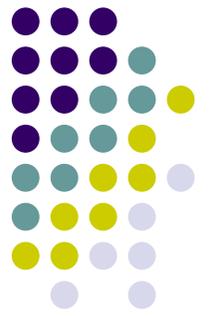
- Holds an argument together
- Infer from facts and assumptions
- Conclusion arrived at **inductively** (歸納) are certain (general to specific)
- Conclusion arrived at **deductively** (演繹) are only probable at best (specific to general)
- Logical reasoning: identify and detect fallacies



5. Point of View (觀點)

- How people perceives and makes meaning of anything
- Develop from prior **experience**, cultural **background**, values, **expectations**, interests, existing **knowledge**
- Chooses to observe, read, or attend to
- Make our own meaning
- To look at it from a variety of viewpoints (**objectivity**)

6. Procedures for Applying Criteria



A number of procedures, including asking questions and making judgments are initiated, informed, and driven by what we know

1. About a **subject** or domain
2. About the **kinds of judgments** that can be or should be made
3. About the **criteria** we need to use



6.1 Socratic questioning:

Socratic Questioning seeks:

- to identify point of view,
- to discover assumptions,
- to distinguish factual claims from value judgment
- to detect flaws (弱點) in reasoning.



6.2 Socratic questioning:

1. Seeking reasons and evidence
2. Looking for implications and consequences
3. Finding and reflecting on assumptions
4. Seeking examples and analogies
5. Looking for objections
6. Identifying and taking different view points or perspectives
7. Distinguishing what is known from what is believed
8. Detecting inconsistencies, overgeneralizations, and vagueness

Thank You

