Critical Thinking in Management Education – Models and Pedagogical Strategies

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College of Business Administration
Critical Thinking

• One of core missions of higher education
• Critical Thinking vs “thinking”:
  – “…reasonable, reflective thinking that is aimed at deciding what to believe or what to do.” (p.9, Ennis, 1987).
  – reasoning, being logical, being well thought out, open-mindedness
  – Oppose to: memorization, taking things for granted, biased
  – develop skepticism
  – question and challenge assumptions
  – derive at conclusions after critical examination
Critical Thinking

• Studies consistently show that students fell short on critical thinking skills

• Concerns at national levels (National commission on Excellence in Education, 1983; US Department of Education, 1990)

• Study of 2,300 undergraduate students found 45% of the students show no significant improvement in critical thinking and complex reasoning after first two years of college education (Arum and Roksa, 2011)
Yes, we did!
...we DID??!
Critical Thinking in Curriculum

• Usually taught by Philosophy Department
  – PHIL 170 😊
  – Linguistic-driven
  – Little reference to business or management domain

• In Management Curriculum
  – Formal training
  – Reinforced and applied throughout curriculum
  – Need a complete and coherent curriculum design
Critical Thinking vs. Thinking

• “What kind of thinking is not critical thinking – at least not in my class!” -- anonymous faculty

• Finance professor: how can my students not be thinking critically if he can use three methods to determine an undervalued stock?

• IS professor: Without purposeful or recursively thinking, one cannot produce a computer program that works!
Critical Thinking

• “… reasonable, reflective thinking that is aimed at deciding what to believe or what to do.” (p.9, Ennis, 1987)

• Essential elements (Hunter, 2000)
  1. Deciding what to believe
     critically examines assumptions, believes, and biases.
  2. Deciding what to do
     forms a logical inference in its decision making
  3. Reasonable thinking
     thinks and acts with good reasons
  4. Reflective reasoning
     questions the fundamentals of the problem itself
  5. Manifested by a series of logical argumentations
Critical Thinking

• Keyword: “reflective”

• IS Professor:
  • Write a computer program that works
  • Whether the computer program is the solution of the problem?

  ❖ Both can involve certain degrees of “critical thinking”, but which one provides better training for critical thinking?
Critical Thinking vs. Blooms Taxonomy

• Blooms taxonomy: level of skills in comprehension

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>Knowledge</td>
<td>be able to memorize and recall of basic terms and concepts</td>
</tr>
<tr>
<td>Comprehension</td>
<td>be able to translate, interpret, and extrapolate</td>
</tr>
<tr>
<td>Application</td>
<td>be able to apply knowledge, techniques, and rules to solve problems</td>
</tr>
<tr>
<td>Analysis</td>
<td>be able to break information into parts and identify cause and effect, make inference</td>
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<tr>
<td>Synthesis</td>
<td>be able to compile and combine information</td>
</tr>
<tr>
<td>Evaluation</td>
<td>be able to make judgment about information, validity of ideas, and quality of work</td>
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• Critical Thinking: A spirit that utilizes all levels of skills
Problem Solving Life Cycle

• Problem Solving
  – Relevant in business curriculum
  – Managers are problem solvers/decision makers

• Problem Solving Life Cycle (PSLC)
  ➤ Problem Diagnosis
  ➤ Solution Design
  ➤ Implementation Design
  – Each phase can be a training ground for critical thinking
The Problem Diagnosis Phase

• Description
  – Problem identification and diagnosis through analysis and critical thinking
  – Justify assumptions

• Deliverables
  – A statement of problem analysis, including symptom vs. problem, justification for assumptions and conclusions

• Critical Thinking Skill Assessment
  – Did the student reflect on what the “problem” is?
  – Did the student critically examine the assumptions of the problem?
  – Did the student distinguish the “problem” from the “symptom”?
  – Did the student support arguments with evidence?
  – Did the student discover hidden patterns in data and suggest creative insights and observations?
The Solution Generation Phase

• **Description**
  – Generate solutions
  – Feasibility study of each solution
  – Pros and Cons of each alternative

• **Deliverables**
  – A written proposal for solutions, including rationale, justification, projection, and possible consequences.

• **Critical Thinking Skill Assessment**
  – Did the student reflect on the causal relationship between the proposed “solution” to the proposed “problem”?
  – Did the student critically examine the assumptions to the solutions?
  – Did the student suggest possible consequences as a result of adopting this solution?
  – Did the student support his/her arguments with evidence?
  – Did the student demonstrate creativity in finding the solutions?
The Implementation Design Phase

• **Description**
  – Creating a plan for implementation
  – Plan for monitoring and feedback

• **Deliverables**
  – An implementation plan that is feasible, with clear statement of what needs to be done and how to do it, and plans for monitoring and feedback.

• **Critical Thinking Skill Assessment**
  – Did the student propose an implementation plan that is feasible and well thought out?
  – Did the student critically examine the assumptions to the implementation plan?
  – Did the student demonstrate creativity in designing the implementation?
  – Did the student reflect on the causal relationship that the implementation plan would lead to the desirable outcome?
  – Did the student suggest implementation issues, and how to solve those?
  – Did the student support the plan with data analysis, projection, and related evidence?
  – Did the student suggest plans for continuing monitor and feedback?
Curriculum Model
A real “critical thinking” project!

By All CBA Faculty

• Problem diagnosis
  – Critical thinking skill is low
    • How do we know this?
    • What is the real problem?

• Solution generation
  – ...
  – ...
  – ...

• Implementation
  – ...
  – ...
  – ...
Thank you!!