

CRITICAL THINKING WORKSHOP

March 21,
2014

*"Too often we... enjoy the comfort of opinion
without the discomfort of thought."*

- JOHN F. KENNEDY

WHY ARE WE HERE?

- Provide a brief background
 - Highlight the revised Critical Thinking university learning goal
- Recognize potential barriers to the development of critical thinking skills
- Consider students' levels of intellectual development and metacognitive insight
 - Solicit your insight, suggestions, experiences
- Provide opportunities to collaborate in break-out sessions

BACKSTORY.....BEHIND THE SCENES

- **Long-term concerns regarding EIU student learning outcomes**
 - **EWP**
 - *Construct & analyze arguments is major area of weakness*
 - *32% of papers appear to ask for anything more than summarize*
 - **Watson-Glaser Critical Thinking Appraisal**
 - *Trend past several years: 24.90/40.00 (composite score)*
 - **Collegiate Learning Assessment (CLA)**
 - *24% of EIU seniors were below expectations; 38% well-below expectations for critiquing arguments & writing analytically*
 - *No growth in Making an Argument*
 - **National Survey of Student Engagement (NSSE)**
 - *63% of EIU seniors reported being asked to memorize “very much/quite a bit”*

AMIDST GROWING CONCERN..... *ARE STUDENTS LEARNING TO THINK?*

45% percent of students made no significant improvement in their critical thinking, reasoning or writing skills during the *first two years* of college

After four years, 36% showed no significant gains in higher order thinking skills

- ***Academically Adrift (Arum & Roksa, 2011)***
- Study followed 2,322 college students between 2005-2009
 - CLA & NSSE data

AAC&U PRESS RELEASE, 4/10/13, SUMMARIZING KEY FINDINGS FROM SURVEY OF EMPLOYERS

- *93% of employers surveyed...“a demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than [a candidate’s] undergraduate major.”*
- *>75% of those surveyed ...”more emphasis on five key areas including: critical thinking, complex problem solving, written and oral communication, and applied knowledge in real-world settings.”*
- **AAC&U Press Release, April 10, 2013**
 - http://www.aacu.org/press_room/press_releases/2013/leapcompactandemployersurvey.cfm
- ***It Takes More Than a Major: Employer Priorities for College Learning and Student Success***
 - http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf

LEARNING GOALS REVIEW COMMITTEE

- **Council of Academic Affairs University Learning Goals Committee, November 2011**
 - *“to review integration, instructional practices, and effectiveness of EIU’s four undergraduate university learning goals (LGs)”*
 - <http://www.eiu.edu/learninggoals/pdfs/CAA%2013-83%20CAALearningGoalsCommResolution.pdf>
- **26 committee members:**
 - CAA members, members of College Curriculum Committees, CASL learning goal experts, student government representatives, and other invited faculty members with expertise/interest in the learning goals.

5 SUB-COMMITTEES:

Writing

Speaking

Critical Thinking

Responsible Citizenship

Quantitative Reasoning

1. Reviewed learning goal assessment data
2. Reviewed literature for current/model definitions of each area
3. Surveyed relevant research and practitioner literature
4. Examined practices of peer and non-peer institutions
5. Partnered with CASL to look at Critical Thinking in EWP papers
6. Conducted a university-wide faculty survey
7. Reviewed representative general education and major program syllabi

LEARNING GOALS REVIEW COMMITTEE WORK COMPLETED:

■ Learning Goals Report

- 100-page report and summary documents

- <http://www.eiu.edu/learninggoals/pdfs/CAA%20Learning%20Goals%20Review%20Report%20Final.pdf>

- Presented findings and possible recommendations at 17 councils

■ CAA approved 5-year plan

- *“improving student learning outcomes at the university through systemic increase in academic rigor and improvement of curricular, instructional, and assessment practices in both the general education and major programs”*

- CAA Minutes, 04/25/2013, p. 8

- <http://castle.eiu.edu/~eiucaa/2012-13CAA/SP13/05-02-13/Minutes/04-25-13Minutes.pdf>

REVISED LEARNING GOALS

Critical Thinking
Writing & Critical Reading
Speaking & Listening
Quantitative Reasoning
Responsible Citizenship

- Approved Jan 16, 2014
- <http://www.eiu.edu/learninggoals/revisedgoals.php>

How do you define critical thinking?

EIU CAA Learning Goals Review Report 2012-2013

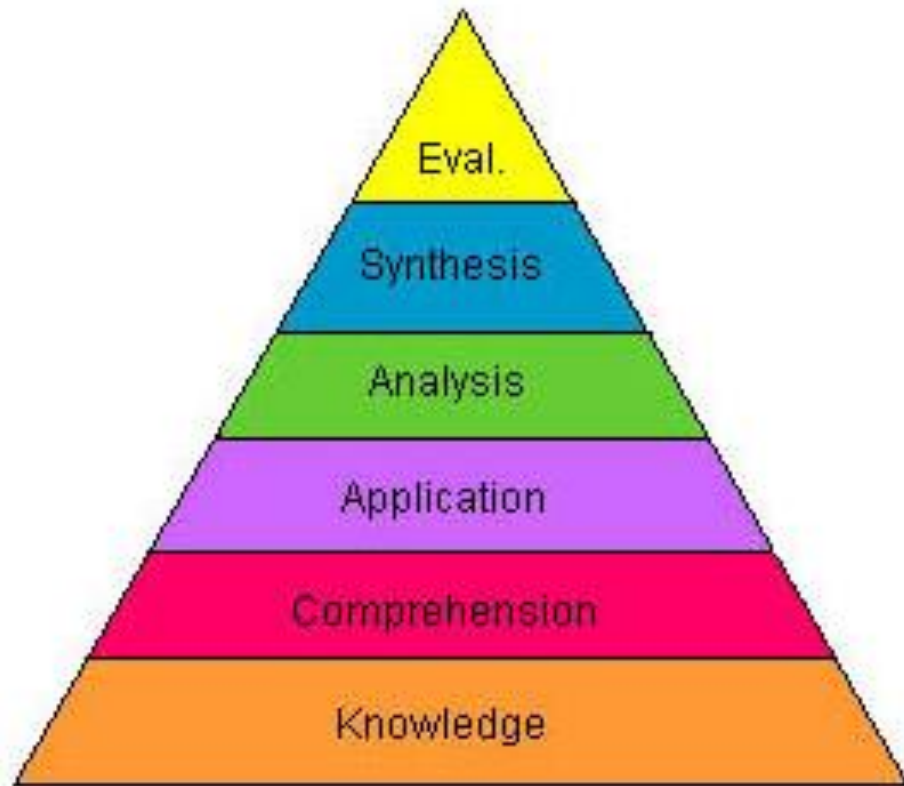
White Paper on Critical Thinking, pp. 32-54

<http://www.eiu.edu/learninggoals/pdfs/CAA%20Learning%20Goals%20Review%20Report%20Final.pdf>

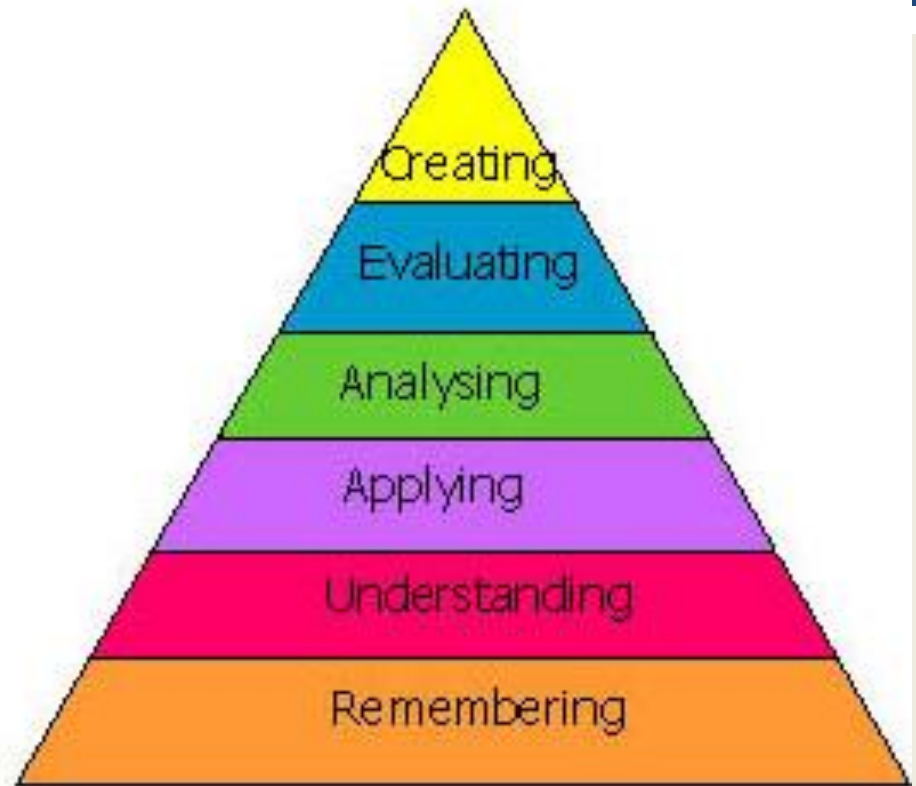
REVISED CRITICAL THINKING LEARNING GOAL

- **EIU graduates question, examine, evaluate, and respond to problems or arguments by:**
 - Asking essential questions and engaging diverse perspectives.
 - Seeking and gathering data, information, and knowledge from experience, texts, graphics, and media.
 - Understanding, interpreting, and critiquing relevant data, information, and knowledge.
 - Synthesizing and integrating data, information, and knowledge to infer and create new insights.
 - Anticipating, reflecting upon, and evaluating implications of assumptions, arguments, hypotheses, and conclusions.
 - Creating and presenting defensible expressions, arguments, positions, hypotheses, and proposals.
 - <http://www.eiu.edu/learninggoals/revisedgoals.php>

BLOOM'S REVISED TAXONOMY



Old Version



New Version

Often used as a source of common language to define learning goals, evaluate objectives & activities, determine clear means of assessment, and support curriculum planning.

TAXONOMY TABLE

KNOWLEDGE	Metacognitive				✓		
	Procedural		✓				
	Conceptual						
	Factual	✓					
		Remember	Understand	Apply	Analyze	Evaluate	Create
		COGNITIVE PROCESSES					

Adapted from Krathwohl, 2002

**How do you get
students to learn
how to think
critically?**

FACULTY PERCEPTIONS OF BARRIERS TO CRITICAL THINKING

- **77% of faculty indicated CT learning goal was strongly related to their course objectives**
- **~2/3 reported providing explicit teaching to develop critical thinking skills**
- **Open Comment section:**
 - 48% referenced students' resistance, lack of preparation/inability to engage in critical thinking;
 - 42% reported the majority of their exam questions were designed for recall and comprehension of information;
 - 35% cited difficulty infusing CT expectations into content-heavy courses
 - 31% indicated difficulty assessing critical thinking skills;
 - 29% cited practical difficulty infusing CT expectations into intro courses

(FA '12 75-item survey re: instructional practices & student expectations which polled 638 total courses with a 62% response rate)

<http://www.eiu.edu/learninggoals/pdfs/CAA%20Learning%20Goals%20Review%20Report%20Final.pdf>

**So, what makes a
'good' student?**

WHAT DO STUDENTS KNOW ABOUT THINKING, AND IN PARTICULAR, THEIR OWN THINKING?

■ **Metacognition**

■ **Knowledge**

- Of strategies for learning, solving problems, thinking, reasoning
- Of metacognitive strategies (e.g. plan, monitor, revise, repair)
- Of the nature of task-difficulty, and what is required or expected
- Of one's own strengths & weaknesses as a budding thinker

■ **Appraisal**

- Capacity to attend to, monitor, and evaluate one's efforts
- Capacity to accurately evaluate & analyze one's efforts
- Capacity to recognize a need to expand or develop

■ **Regulation**

- Potential to engage in deliberate planfulness to alter outcomes
- Potential to adapt to increased demands or expectations
- Potential to shift efforts to correct errors or inconsistencies
- Potential to update self-knowledge, strategy-knowledge, etc.

HOW DO STUDENTS DEVELOP INTELLECTUALLY?

- **From *YOU TELL ME!* → I can create & defend knowledge.**
 - *Kurfiss, 1988; Hansen, 2011*
- **Stage 1: *Received Knowledge***
- **Students believe:**
 - Knowledge = mostly concrete facts, given or told to students
 - Learning = shoving information into brain
 - Proof = regurgitation, summation, or repetition
- **Challenges:**
 - Students depend upon instructor to identify what is important
 - Students become uncomfortable if instructor fails to supply facts or insight (*“Is this on the test?”*)

INTELLECTUAL DEVELOPMENT: EARLY DEFENSES

■ Stage 2: *Subjective Knowledge*

■ Students believe:

- Knowledge = must be subjective opinion
 - (mine vs. yours.....*everybody has one*)
- Learning = surface thinking, offering opinions
- Proof = react, respond, describe

■ Challenges:

- Student perceives poor grades defensively
- *“You just don’t like my ideas/opinions/answers”*
- Students complain that evaluation criteria were unclear
- *“You didn’t say I had to*”

INTELLECTUAL DEVELOPMENT: EVOLVING INSIGHT

■ Stage 3: *Procedural Knowledge*

■ Students realize:

- Knowledge = more than mere opinion; defensible by reason
- Learning = classify, compare, distinguish, differentiate, analyze
- Proof = integrate, apply, conclude, infer, predict

■ Challenges:

- Learning is complicated and unfamiliar—endless analysis
- Students are novice thinkers & need deliberate practice
- Assignments may require consideration and revision
- Grading may be more time-consuming, particularly as you evaluate for defensible, well-articulated rationale

INTELLECTUAL DEVELOPMENT: FINAL PRODUCT

■ Stage 4: *Constructed Knowledge*

■ Students realize:

- Knowledge = *constructed* via evaluation, analysis, conclusion, prediction, expression, & defense of multiple sources & contexts
- Learning = skillful, refined ability to engage in complex thinking
- Proof = create, invent, compose

■ Challenges:

- Students may be completely out of comfort zone, ill-equipped
- Students may be unaware of the level of expectation
- Students may be fearful, lack self-confidence or self-discipline
- Time-consuming nature of developing and grading 'thinking'

How are our students performing?

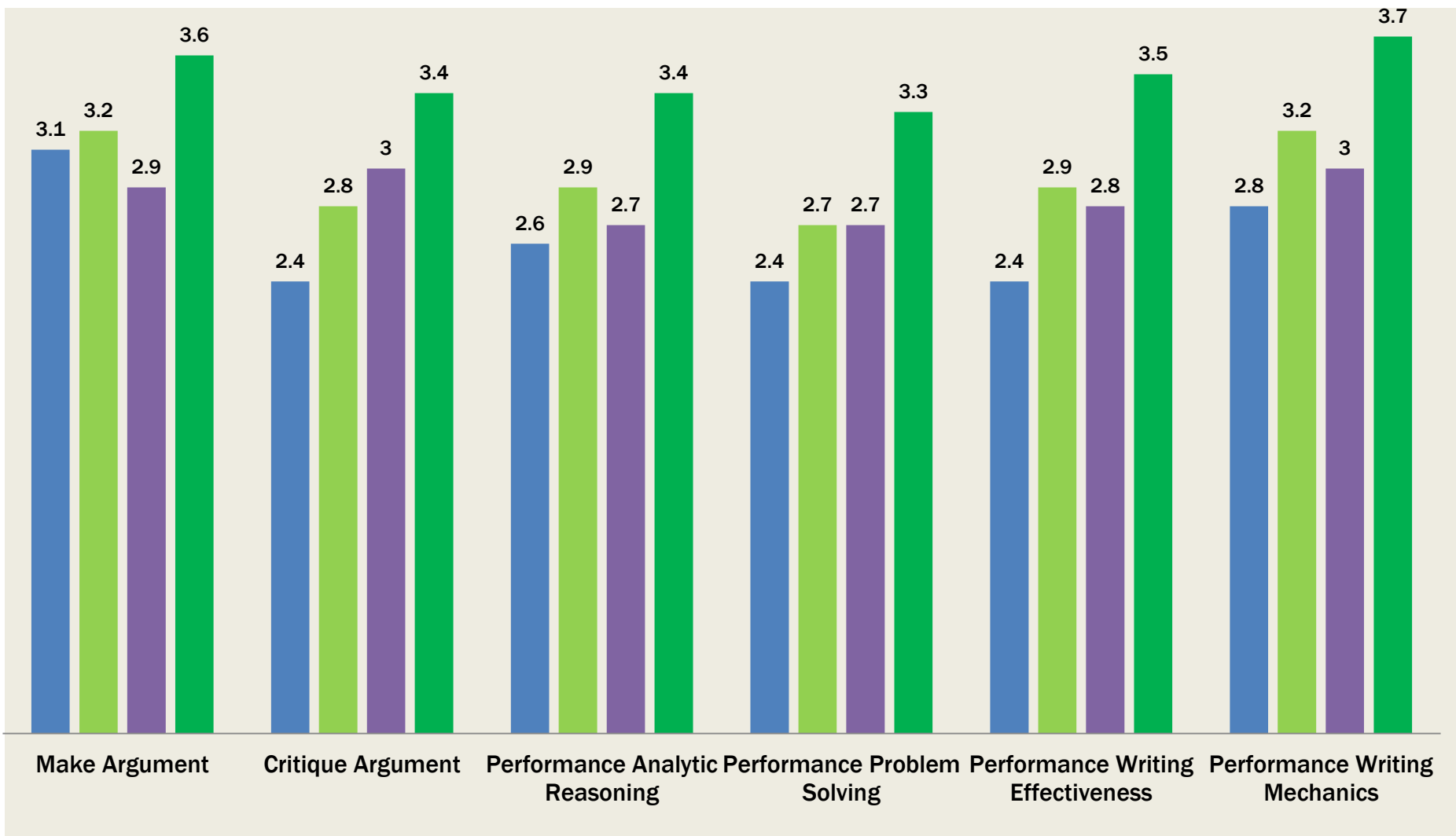
EIU CAA Learning Goals Review Report 2012-2013

Critical Thinking Data, pp. 34-38

<http://www.eiu.edu/learninggoals/pdfs/CAA%20Learning%20Goals%20Review%20Report%20Final.pdf>

2011-12 Collegiate Learning Assessment Data

■ EIU Freshman ■ All Freshman ■ EIU Seniors ■ All Seniors



WHAT BARRIERS DO OUR STUDENTS FACE?

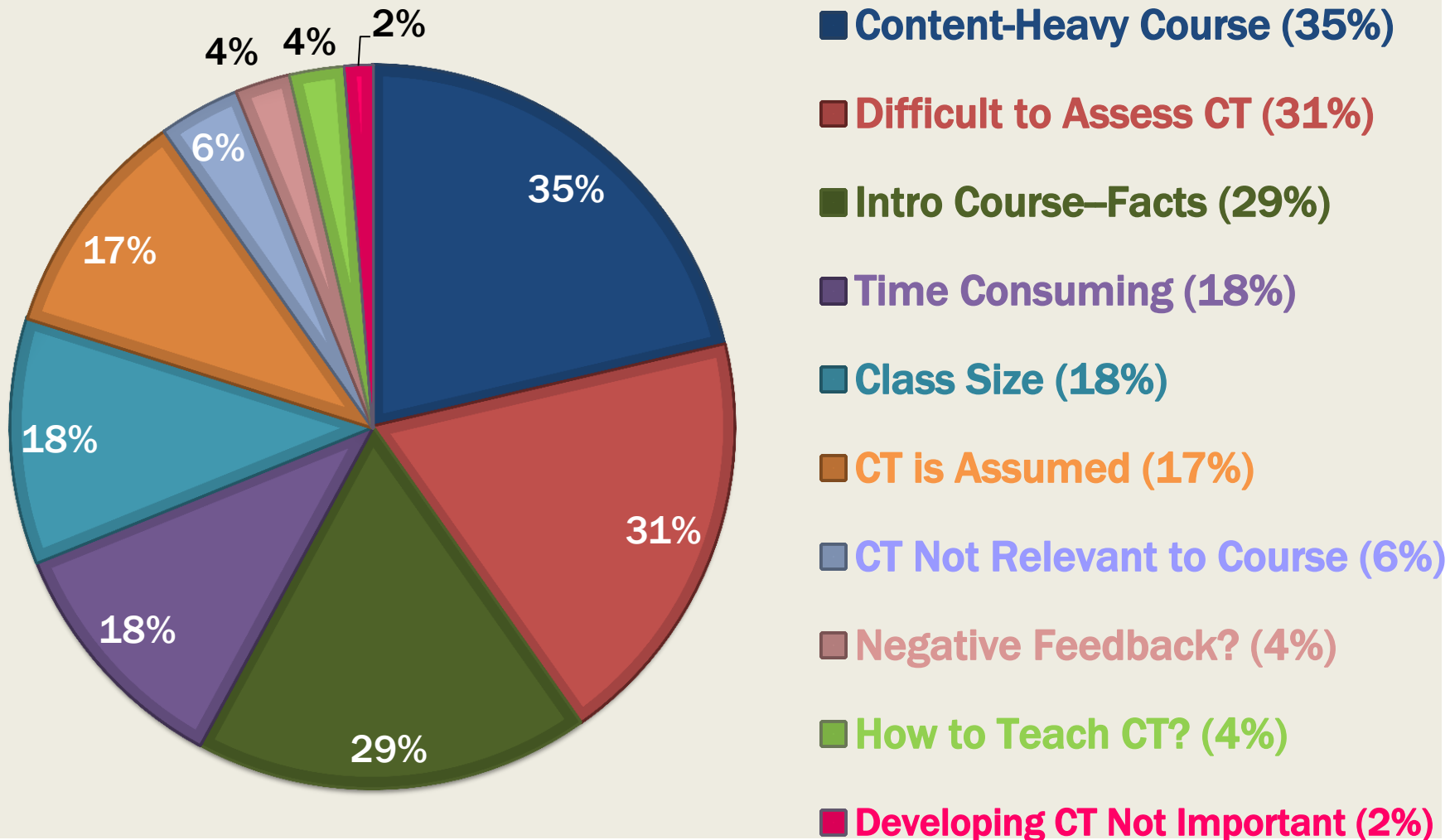


Habits
of a
skilled
critical
thinker

Adapted from Paul & Elder, 2009.

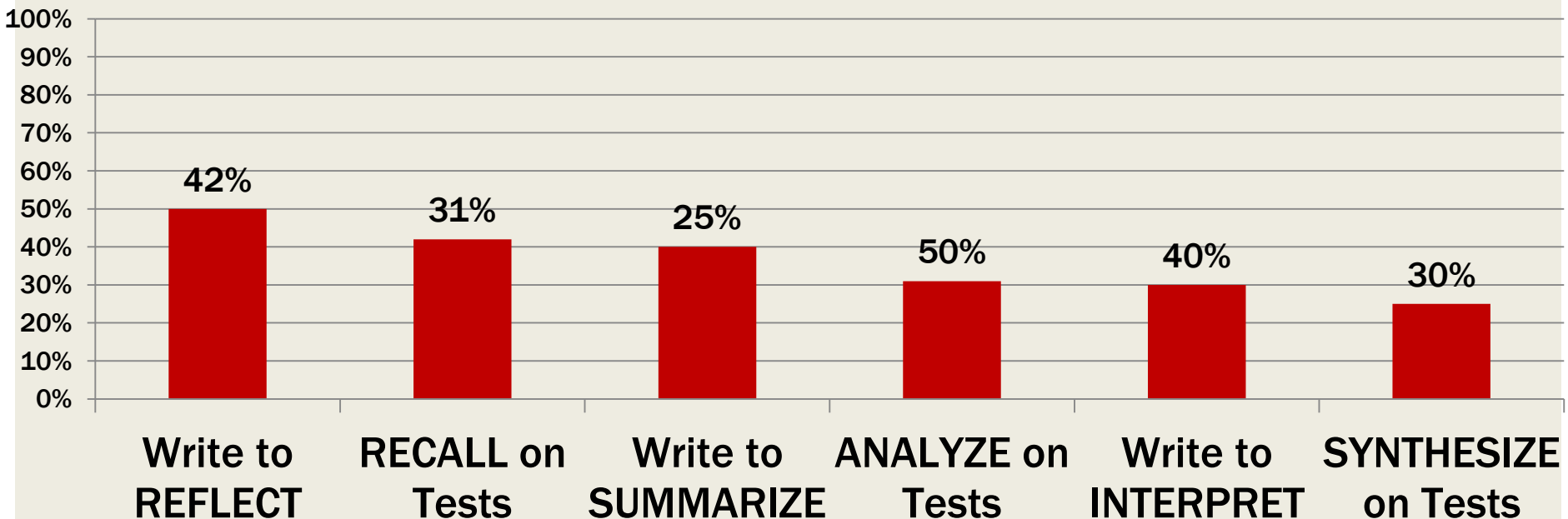
FACULTY PERCEPTION OF BARRIERS TO FACILITATING CRITICAL THINKING

EIU Faculty Survey, Fall 2012



WHAT ARE WE ASKING OUR STUDENTS TO DO?

Faculty Reporting on the Nature of their Exams & Writing Assignments



**Are students aware they are being asked
to think critically?**

**Do students have the tools to develop
intellectually?**

**What level of thinking do class
assignments demand?**

**Can assignments be adapted to require
more complex levels of thinking?**

EIU CAA Learning Goals Review Report 2012-2013

Critical Thinking Instructional Practices, pp. 36-38

<http://www.eiu.edu/learninggoals/pdfs/CAA%20Learning%20Goals%20Review%20Report%20Final.pdf>

What causes your
students' *Ah-HAH*
moment?

BREAKOUT SESSIONS

DEVELOPING ASSIGNMENTS

**What's your most
successful critical
thinking
assignment?**

THINKING IN THE CLASSROOM

**How do you elicit
discussion,
debate, and
analysis?**

TEST QUESTIONS

**How do you write
test questions that
go beyond
memorization?**

CASE-BASED LEARNING

How do you make
use of case-based
learning
opportunities?

**REMARKS FROM
BREAK OUT
SESSIONS**

CT RUBRICS: OPTIONS TO CONSIDER

- AAC&U Critical Thinking Rubric
 - <http://www.aacu.org/value/rubrics/pdf/CriticalThinking.pdf>
- Kansas State University Critical Thinking Rubric
 - <https://www.k-state.edu/assessment/initiatives/ctproject/rubric.pdf>
- Northeastern Illinois University Critical Thinking Rubric
 - <http://business.fullerton.edu/centers/CollegeAssessmentCenter/RubricDirectory/CritThinking/CriticalThinkingRubric9.pdf>
- Portland State University Holistic Critical Thinking Rubric
 - http://www.chaffey.edu/SLO/assess_materials/Assessments%20and%20Materials%20for%20Core%20Competency%20-%20Critical%20Thinking/Portland%20State%20University%20Studies%20Program%20Holistic%20Critical%20Thinking%20Rubric.pdf
- St. Petersburg College Critical Thinking Rubric
 - http://www.google.com/cse?cx=006264536472336337462%3Agtkvth6q_bk&ie=UTF-8&q=ARC+assignment+profile&sa=Search#gsc.tab=0&gsc.q=ARC%20assignment%20profile&gsc.page=1
- Temple Critical Thinking Rubric
 - <https://www.temple.edu/tlc/resources/handouts/grading/Holistic%20Critical%20Thinking%20Scoring%20Rubric.v2.pdf>
- University of Minnesota—Duluth Critical Thinking Rubric
 - <http://www.d.umn.edu/vcaa/assessment/documents/CriticalThinkingrubric.pdf>
- University of Louisville Critical Thinking Rubric for Mathematics
 - https://louisville.edu/provost/GER/rubrics/Math_Rubric.pdf
- Washington State University Guide to Critical & Integrative Thinking Rubric
 - http://www.cpcc.edu/learningcollege/learning-outcomes/rubrics/WST_Rubric.pdf

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