University Learning Goals

Eastern Illinois University Council on Academic Affairs

Revised Critical Thinking University Learning Goal Adopted

On January 16, 2014, the EIU Council on Academic Affairs adopted revised undergraduate University Learning Goals, which become effective during the Fall 2014 semester. Among the goals is one focused on Critical Thinking:

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.

What is critical thinking? Why is it deemed to be so important to higher education? How well do our students learn how to think critically at EIU? What are some of the best practices used to help students learn how to be critical thinkers? These, briefly, were some of the questions explored by the Critical Thinking subcommittee of the CAA's Learning Goals Committee. This handout briefly summarizes how we got to this point at EIU and the wider context of discussions about critical thinking, before addressing some possible approaches to improving teaching and learning of critical thinking. The facilitators for the Critical Thinking Workshop are not experts, but interested colleagues, who look forward to building a library of best practices in the field with our peers as we collaborate to make critical thinking a more intentional goal of our university curricula.

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Learning Goals Workshop Series

Introduction
February 20, 10 am-noon
Arcola-Tuscola Room

Writing and Critical Reading
February 25, 2-4 pm
Arcola-Tuscola Room

Speaking and Listening
March 3, 2-4 pm
Arcola-Tuscola Room

Critical Thinking
March 21, 11 am –1 pm
1103 Buzzard Hall

Responsible Citizenship
March 24, 2-4 pm
Arcola-Tuscola Room

Quantitative Reasoning
April 1, 10 am-noon
Arcola-Tuscola Room

Revised Speaking and Listening Learning Goal

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In January 2014, CAA adopted a revised set of learning goals, the product of long discussion and review. Critical thinking is one of these goals, and it is also part of EIU's mission statement ("…students refine their abilities to reason…") and general education mission ("to encourage students to think critically and reflectively."). Critical thinking has a long history in American higher education, and it is central to influential learning goals, such as those promoted by the American Association of Colleges and Universities (LEAP) and the Lumina Foundation (DQP 2.0). It is also, not surprisingly, featured in the learning goals of all of EIU's public peer institutions.

EIU has assessed the state of teaching and learning of critical thinking over many years, using faculty surveys, the Watson-Glaser test, the Collegiate Learning Assessment, and the National Survey of Student Engagement. According to these studies students at EIU seem to be weak at making arguments and analytical

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Thinking Skills and Key Words for Learning Outcomes within Bloom's Revised Taxonomy
(adapted from Anderson & Krathwohl, 2001)

Bloom's Thinking Skills	**Description of Thinking Skills**	**Key Words for Learning Outcomes**
Create	The ability to creatively or uniquely apply prior knowledge and/or skills to produce new and original thoughts, ideas, processes, etc.	*designs, constructs, plans, produces, invents, devises*
Evaluate	Being able to judge the value of information and/or sources of information based on personal values or opinions.	*appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports*
Analyze	The ability to break information down into its component parts. Analysis also refers to the process of examining information in order to make conclusions regarding cause and effect, interpreting motives, making inferences, or finding evidence to support statements/ arguments.	*analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates*
Apply	Being able to use previously learned information in different situations or in problem solving.	*applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.*
Understand	The ability to grasp the meaning of information (facts, definitions, concepts, etc.) that has been presented.	*comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates.*
Remember	Recalling relevant terminology, specific facts, or different procedures related to information and/or course topics.	*defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states*

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writing – much more detail is available in the annual assessment reports on critical thinking. The conclusion of these inquiries, in sum, is that there is room for improvement in this area.

How can we help students think? The first step is to define critical thinking. There are thousands of books on the topic, but the expanded learning goal itself implicitly contains the core elements of a common, functional definition (see page 1).

Naturally, critical thinking overlaps with our other learning goals. One particularly influential way of framing discussions of critical thinking pedagogy is Bloom's taxonomy of the levels of the cognitive domain. Anderson and Krathwohl (2001) adapted Bloom's model to include language that is oriented towards the language used in expected learning outcome statements. A summary of Anderson and Krathwohl's revised version of Bloom's taxonomy of thinking is provided (see page 2). Bloom's Taxonomy has had tremendous influence in assisting instructors of any subject matter to design instructional activities that cover the six levels of the hierarchy. Throughout the years, the levels have often been depicted as a stairway, leading many instructors to encourage their students to "climb to a higher (level of) thought."

Potential Barriers to Facilitating Critical Thinking

Using Bloom's taxonomy can make assignment expectations explicit to students, and help them develop an awareness of their own learning, as well as providing faculty with a framework for building progressively more challenging assignments, and structuring class learning goals. However, even when faculty have the tools at hand to foster critical thinking, certain barriers may still exist in helping students advance their critical thinking. During the Spring of 2012, the CAA Learning Goals Committee solicited input from all EIU faculty teaching an undergraduate course; questions focused on the instructional practices related to each learning goal, as well as faculty perception of potential barriers to the development of critical thinking skills in our students. The full results of this survey can be found within the CAA Learning Goals Review Report, www.eiu.edu/learninggoals/pdfs/CAA_Learning_Goals_Review_Report_Final.pdf .

While 77% of faculty indicated the critical thinking goal was strongly related to their course objectives, 48% of the open comments "referred to the students' resistance, lack of preparation, and/or inability to engage in critical thinking," (CAA Learning Goals Review Report, p.38). And, despite the fact that approximately 2/3 of instructors reported providing explicit teaching to develop critical thinking skills—an impressive number—faculty also commented on the practical difficulty of infusing critical thinking expectations into introductory courses (29%) and content-heavy courses (35%). Furthermore, 42% of faculty reported the majority of their exam questions were designed for recall and comprehension of information, both of which challenge thinking at the lowest of Bloom's levels. Difficulty assessing critical thinking skills (31%) was also cited by faculty as a potential barrier to facilitating critical thinking.

Instruction in Critical Thinking

Certainly, there are many ways of approaching the instruction of critical thinking. A preliminary bibliography and other resources are available online, at www.eiu.edu/learninggoals/Spring_2014_Workshops.php. The Critical Thinking Workshop presented on March 21, 2014, singled out four particular approaches to fostering the development of critical thinking, with brief descriptions and resources detailed below. Each of these areas was addressed as a break-out session within the Workshop, with the goal to engage in brainstorming, active problem-solving, and collaboration among faculty.

Developing Assignments to Foster Critical Thinking. This session focused on developing assignments that give students opportunities to apply knowledge in new contexts and extend their critical thinking skills. Examples from the facilitators' backgrounds (humanities and science), as well as different assignment formats, were presented. Participants also added examples from their own teaching experience.

Writing Higher-Order Test Questions. A common criticism of multiple choice questions is that they generally assess students' recall of factual information, rather than their ability to think critically. But this does not have to be the case. Based in part on Bloom's taxonomy, a variety of approaches can be used to create multiple choice questions that require students to engage in higher-order thinking.

Promoting Critical Thinking in the Classroom. Classroom discussions and exercises can help students foster habits of critical thought and reflectiveness. We discussed: defining terms, asking good questions, uncovering assumptions, following logical steps and identifying fallacies. Our goal is teaching students how to analyze and build good arguments, as well as to appreciate the challenge in doing so.

Using Case-Based Analysis to Promote Critical Thinking. Case-based learning contains the elements of real-world scenarios, data and documents, and open-ended problems. Students are asked to answer the question, 'What would you do in this situation?' by applying course content to a real-world context, synthesizing materials, exploring multiple perspectives, researching and analyzing data, and building an argument or position informed by research.

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Revised Critical Thinking Learning Goal

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Resources

Flavell, J. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist, 34*(10), 906-911.

Hansen, E. (2011). *Idea-based learning: A course design process to promote conceptual understanding.* Sterling, VA: Stylus Publishing, LLC

Krathwohl, D. (2002). A revision of Bloom's Taxonomy: An overview. *Theory into Practice, 41*(4), 212-218.

Kurfiss, J. G. (1988). Critical thinking: Theory, research, practice, and possibilities. *ASHE-ERIC Higher Education Report No. 2.*

Livingston, J. (1997). *Metaconition: An overview.* ERIC Document ED 474273.

Paul, R., and Elder, L. (2009). *Critical thinking concepts and tools.* Tomales, CA: Foundation for Critical Thinking.

Pintrich, P. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory into Practice, 41*(4), 219-225.

Rubrics

AAC&U: www.aacu.org/value/rubrics/pdf/criticalthinking.pdf

Kansas State University: https://www.k-state.edu/assessment/initiatives/ctproject/rubric.pdf

Northeastern Illinois University:
http://business.fullerton.edu/centers/CollegeAssessmentCenter/RubricDirectory/CritThinkinig/CriticalThinkingRubric9.pdf

St. Petersburg College: http://www.spcollege.edu/criticalthinking/documents/ARC.doc

Temple University:
https://www.temple.edu/tlc/resources/handouts/grading/Holistic%20Critical%20Thinking%20Scoring%20Rubric.v2.pdf

University of Minnesota-Duluth: http://www.d.umn.edu/vcaa/assessment/documents/CriticalThinkingrubric.pdf

University of Louisville: https://louisville.edu/provost/GER/rubrics/Math_Rubric.pdf

Washington State University: http://www.cpcc.edu/learningcollege/learning-outcomes/rubrics/WST_Rubric.pdf

For More Information

EASTERN ILLINOIS UNIVERSITY

EIU Council on Academic Affairs:
http://castle.eiu.edu/eiucaa/

CAA Learning Goals Website:
http://www.eiu.edu/learninggoals/

CAA Learning Goals Report:
www.eiu.edu/learninggoals/pdfs/CAA_Learning_Goals_Review_Report_Final.pdf

EIU Committee for the Assessment of Student Learning (CASL):
http://www.eiu.edu/~assess/caslhome.php

EIU Office of the Provost and Vice President of Academic Affairs:
http://castle.eiu.edu/acaffair/

EIU Strategic Plan:
http://www.eiu.edu/strategicsummary/

EIU NCA Self-Study (Accreditation):
http://www.eiu.edu/nca2014/