Annotated Bibliography: Assessment of Critical Thinking in Higher Education

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An overview of the Collegiate Learning Assessment (CLA), a standardized test that measures critical thinking. Written by the president of the organization that oversees the CLA, the discussion of testing versus portfolios as critical assessment tools may be useful even if the objectivity of the analysis can be doubted.

https://doi.org/10.1007/s10648-014-9280-4

Looks at a subset of critical thinking called critical-analytic thinking, defined as the ability to evaluate information across multiple modes and content areas.


Report of an attempt to assess eight critical thinking skills of 577 City University of Hong Kong students using a brief questionnaire using true/false, multiple choice, and Likert scale queries. Results of the assessment suggest that critical thinking is not merely a cognitive phenomenon and that any attempt to measure critical thinking must address four dimensions: cognitive, motivational, ideological, and behavioral.


Portuguese study examining the use of a variant of Real-World Outcomes, a yes/no based inventory designed to measure the application of critical think skills in students’ every day decision-making in various arena of life: academic, interpersonal, health, political, legal, or financial. This article seems to operate under a different model of critical thinking than most of the others in this bibliography, but the Real-World Outcomes questionnaire may still be useful in a classroom oriented towards critical thinking.

Examines a problem with critical thinking assessment: the impact of written communication skills on assessment scores (i.e. a well-written response can be mistaken for a well-thought response). Appendix includes separate rubrics for critical thinking and writing skills.


Case study reporting the success of using the Critical Thinking Assessment Test (CAT) (see Stein, below) in conjunction with CAT-Apps (CAT Applications within the discipline) training for faculty members. The result is better alignment of critical thinking assessment with teaching practices, as well as an increased sense of group identity among faculty attempting to teach critical thinking skills in their classrooms.


Provides a summary of the Paul-Elder Critical Thinking Model, which focuses on the role of metacognition in problem-solving. Useful charts (Figures 1-3) and sample rubric.


Provides a comprehensive overview of the varying definitions of critical thinking, available assessments, and challenges in assessing critical thinking. The second half of the report proposes an operational definition of critical thinking consisting of five dimensions: two *analytical* dimensions (evaluating evidence, analyzing arguments); two *synthetic* dimensions (understanding implications, produce new arguments) as well as understanding causation. Possible assessment methods utilizing this definition are discussed.


Description of a pilot program for a general education capstone course. The ePortfolio consisted of prior coursework, a reflective essay connecting general education learning with disciplinary courses, and a summary of the overall impact of general education on their learning.

An overview of the efforts to assess critical thinking at the University of West Florida College of Business, including brief descriptions of 11 lessons learned in the process.


Describes an assessment regime in which “compulsory, product-focused” (i.e. summative) assessments were combined with “voluntary, processed-focused” formative assessments. Positive results were shown with the processed-focused assessments, which were designed to require student critical thinking. The study authors conclude that these sorts of assessments can produce even better results when more directly tied to disciplinary issues.


Small study using pre- and post-testing to measure critical thinking skills. Classroom that also used journaling with metacognitive writing prompts scored higher on post-test than classroom without journaling prompts.


Examines differences between students’ self-reported and directly measured critical thinking abilities, the latter using the Collegiate Assessment of Academic Proficiency (CAAP). The authors of the study conclude that a wide variety of learning activities can support critical thinking, but assignments that ask challenging questions, require application of abstract concepts, and require comparison and contrast are most likely to produce results.


Overview of the Critical Thinking Assessment Test (CAT), including comparison to the CLA (see Benjamin, above). One key difference is that the CAT is designed to be scored by faculty following training. This allows for more direct knowledge of student strengths and weaknesses.

Describes a learning activity involving the investigation of claims made in popular press science articles. The sample rubric provided seems underdeveloped, but perhaps the activity could be combined with the rubrics of Hathcoat or Hohmann, above.


Examines the Assessment of Critical Thinking Ability (ACTA) survey, in which science students examine multiple research reports on the same phenomena, measuring the handling of conflicting data, the ability to identify and resolve of flaws in studies, and capacity for conceptualizing alternate interpretations. Suggests similar surveys could be easily constructed for other disciplines.