CRITICAL THINKING SKILLS TOOLBOX

This toolbox provides a brief but thorough collection of resources pertaining to Core Curriculum assessment. This toolbox does not replace conversations about Core Curriculum assessment; it is provided so that all instructors can quickly and easily access this information. This toolbox will be continuously updated to insert, remove, and otherwise revise information when necessary.

Critical Thinking Skills Assessment Overview

Critical Thinking Skills refers to a student's ability to analyze ("break down") important components of information, questions, or problems; to synthesize (integrate, compare and contrast) multiple pieces of information; and to evaluate (draw conclusions from) information, questions, or problems. This process also features the ability to identify and skillfully use credible source material.

The focus of Critical Thinking Skills assessment is often procedural, in that the student must explicitly demonstrate why he/she has made certain arguments and how he/she came to various conclusions. As such, it is often necessary for students document this process in their work rather than merely aligning themselves with an argument or a conclusion, such as through the selection of a multiple-choice exam item.

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On the following pages, you will find….

CRITICAL THINKING SKILLS RUBRIC

	Capstone	Milestones		Benchmark	Below Benchmark	Section Score
	4	3	2	1	0	
Explanation of Issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.	Failed to meet benchmark.	
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.	Failed to meet benchmark.	
Student's Central Argument (perspective, thesis/hypothesis)	Specific argument (perspective, thesis/hypothesis) takes into account the complexities of an issue. Limits of argument (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within argument (perspective, thesis/hypothesis).	Specific argument (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within argument (perspective, thesis/hypothesis).	Specific argument (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific argument (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.	Failed to meet benchmark.	
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.	Failed to meet benchmark.	
					TOTAL Score	

Rubric selected and approved in January 2013 by the Core Curriculum sub-committee of the A3C to assess Core artifacts on Critical Thinking Skills.
Revisions made by Academic Assessment Committee in February 2016, and again by Core Faculty Review Panel in advance of Fall 2018.

EXAMPLES OF CRITICAL THINKING SKILLS ASSIGNMENT STRATEGIES

Strategy	Description	Sample assignments, tools, and other resources
Collect and evaluate students' responses to stimulus material.	Students could be presented with arguments, data, proposals, and/or other stimuli and could be instructed to use course materials (findings from research articles, historical texts, information introduced via course textbooks, etc.) to evaluate the merits of that stimuli. Responses could focus on identifying strengths and weaknesses, accuracies versus inaccuracies, pros and cons, and other evaluative angles.	• Copy of brief summaries of assignment ideas from multiple disciplines, including English, business, political science, biology, philosophy, and mathematics (available upon request[1])
Collect and evaluate student efforts to compare and contrast course concepts.	Students could be asked to reference a phenomenon, historical event, literary topic, or other course concept and evaluate it through the lens of multiple and/or competing theoretical frameworks, historical perspectives, literary concepts, and other lenses.	• Copy of instructions for a mate preferences essay used in an introductory psychology course (available upon request[1])
Collect and evaluate student standpoint assignment or creative assignments.	Instead of asking students to respond to stimulus materials (such as others' arguments, data, proposals, and/or other stimuli, as featured in the first row of this table), students could be asked to produce and substantiate these materials themselves in response to specific assignment prompts.	• Copy of assignment prompt ideas from various disciplines, including biology, political science, and business (available upon request[1])

NOTE: As with Communication Skills, Critical Thinking Skills is one of the most versatile competencies in terms of designing an assignment and aligning that assignment with the Critical Thinking Skills rubric. The assignment strategies presented here represent only a few of all possible strategies. Furthermore, it is relatively easy to design an assignment that embodies both Critical Thinking Skills and other competencies as well. Future revisions of this toolbox will include information on assignment strategies that align with other competencies in addition to Critical Thinking Skills.

[1] Please contact the Academic Assessment Coordinator for these materials. All of these materials will soon be posted on a webpage that is in development.

CRITICAL THINKING SKILLS RESOURCES FOR FACULTY

Description	Link or instructions to obtain resources
Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamin, R., & Zhang, D. (2008). Instructional interventions affecting critical thinking skills and dispositions: A stage 1 meta-analysis. *Review of Educational Research, 78,* 1102-1134. This article examines the effects that various critical thinking interventions have on students' actual critical thinking development.	This article can be accessed here: http://rer.sagepub.com/content/78/4/1102.full
Broadbear, J. T. (2003). Essential elements of lessons designed to promote critical thinking. *Journal of The Scholarship of Teaching and Learning, 3,* 1-8. This article provides an overview of four elements of lessons that can promote critical thinking development: ill-structured problems, criteria for assessing critical thinking, student assessment of thinking, and improvement of thinking.	This article can be accessed here: http://josotl.indiana.edu/article/download/1603/1602
Kennedy, R. (2007). In-class debates: Fertile ground for active learning and the cultivation of critical thinking and oral communication skills. *International Journal of Teaching and Learning in Higher Education, 19,* 183-190. This article discusses the strengths, limitations, and effects of five in-class debate formats (meeting-house, four-corner, fishbowl, think-pair-share, and role-play debates) on students' critical thinking skills and oral communication skills.	This article can be accessed here: http://isetl.org/ijtlhe/pdf/IJTLHE19(2).pdf#page=83
King, A. (1995). Designing the instructional process to enhance critical thinking across the curriculum. Inquiring minds really do want to know: Using questioning to teach critical thinking. *Teaching of Psychology, 22,* 13-16. This article provides a brief, straightforward discussion of various pedagogical practices faculty can use to encourage critical thinking in their courses.	This article can be accessed here: http://top.sagepub.com/content/22/1/13.full.pdf
Lunney, M., Fredrickson, K., Spark, A., and McDuffie, G. (2008). Facilitating critical thinking through online courses. *Journal of Asynchronous Learning Networks, 12,* 85-97. This article proposes ten teaching strategies that can be used to foster critical thinking in online courses.	This article can be accessed here: http://files.eric.ed.gov/fulltext/EJ837517.pdf
MacKnight, C. B. (2000). Teaching critical thinking through online discussions. *Educause Quarterly, 4,* 38-41. This article provides strategies, examples, and suggestions for tools that can be used to foster critical thinking through online discussions.	This article can be accessed here: http://eac595b.pbworks.com/f/macknight+2000+questions[1].pdf
Snyder, L. G., & Snyder, M. J. (2008). Teaching critical thinking and problem solving skills. *The Delta Pi Epsilon Journal, 1,* 90-99. This article provides descriptions of pedagogical practices designed to foster critical thinking.	This article can be accessed here: http://search.proquest.com/openview/f2f7dcf293cbea40fa0a25293bd21195/1?pq-origsite=gscholar
Wade, C. (1995). Using writing to develop and assess critical thinking. *Teaching of Psychology, 22,* 24-28. This article discusses writing as a tool for critical thinking assessment and development.	This article can be accessed here: http://top.sagepub.com/content/22/1/24.full.pdf

CRITICAL THINKING SKILLS RESOURCES FOR STUDENTS

Description	Link or instructions to obtain resources
The **"Critical reasoning for beginners" podcast/video series** created by the University of Oxford is a six-part series dedicated to the development of multiple facets of critical thinking skills.	This series can be accessed here: http://podcasts.ox.ac.uk/series/critical-reasoning-beginners
A **"Critical Thinking" module** can be found on Khan Academy, and provides information, videos, and exercises designed to help students think about and develop critical thinking skills.	This module can be accessed here: https://www.khanacademy.org/partner-content/wi-phi/critical-thinking
The **"Critically processing what you read" webpage** hosted by The Open University provides a discussion of the components that are necessary to critically evaluate others' work. This discussion includes a checklist of questions students should ask (per component or section) to ensure optimal analysis.	This webpage can be accessed here: http://www2.open.ac.uk/students/skillsforstudy/critically-processing-what-you-read.php
The **"Distinguishing between inferences and assumptions" webpage** created by The Critical Thinking Community distinguishes between inferences and assumptions (using examples). Furthermore, this page provides information on how students can practice identifying their inferences (and the inferences of others) and figuring out the assumptions that lead to those inferences.	This webpage can be accessed here: http://www.criticalthinking.org/pages/critical-thinking-distinguishing-between-inferences-and-assumptions/484
The **"Becoming a critic of your thinking" webpage** discusses and provides examples of strategies students can use to clarify their thinking, increase the focus of their thinking and arguments, formulate better questions, and improve their reasoning skills.	This webpage can be accessed here: http://www.criticalthinking.org/pages/becoming-a-critic-of-your-thinking/478