Critical Thinking: Teaching, Learning, and Assessing

A workshop by Monica Stitt-Bergh and Christine Beaule

Contents
Description .................................................................................................................................................... 1
Presentation Slides ....................................................................................................................................... 2
Critical Thinking: Teaching, Learning, and Assessing (Handout)................................................................. 11
Critical Thinking Project 2018 (Handout).................................................................................................. 14
Critical Thinking: Teaching, Learning, and Assessing—Activity Sheet (Handout)................................. 15
Peer Review Assignment Version 1 (Handout) .......................................................................................... 17
Peer Review Assignment Version 2 (Handout) .......................................................................................... 18
Research Proposal Assignment—Critical Thinking Assignment Example (Handout).......................... 20
Critical Thinking VALUE Rubric.................................................................................................................... 22

Description
Abstract: Participants will learn about key principles from the research on teaching and learning critical thinking and discuss examples of critical thinking assignments. The facilitators will also introduce the Critical Thinking VALUE rubric. Participants will spend time discussing their assignment (or assignment ideas), the application of principles, and possible modifications to the rubric to make it useful in their classroom and for their students (if applicable).
This 75-minute workshop is offered twice. Faculty who teach upper-division courses will also be invited to participate in a critical thinking learning-assessment project.
Facilitators: Monica Stitt-Bergh, Associate Specialist, Assessment Office, and Christine Beaule, Director, General Education Office and Associate Professor, Languages and Literatures of Europe and the Americas
Level: Beginner
Who should attend: All faculty interested in developing students' critical thinking skills.
Format: Presentation + Interactive Activities
Date/time/location:
Tuesday, February 27, 2018, 11:00 AM -12:15 PM, KUY 106
Wednesday, February 28, 2018, 11:00 AM - 12:15 PM, Sinclair Library Learning Arena 1
Critical thinking: Teaching, learning, and assessing

Monica Stitt-Bergh, Assessment Office
Christine Beaule, General Education Office

Mānoa faculty believe critical thinking is important

Undergrad Institutional Learning Objective #2.a

Integral to the spirit of general education
Mānoa investigated students’ critical thinking skills

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<th>Activity/Substantial Learning (NSSE, 2015)</th>
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<td>Learning Achievement Expectations (2016)</td>
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We’re investigating again (2018 Critical Thinking Project)

A. Locate faculty who have assignments – seniors only  
B. Collect assignments & instructions (anonymize/redact)  
C. Evaluate – VALUE rubric  
D. Aggregate results and consider actions

Faculty who participate will receive their students’ results and a book:  
How Learning Works or Engaging Ideas.

See the handout: Critical Thinking Project 2018
Slide 5

Today: our goals for you (aka, learning outcomes)

Describe a type of critical thinking you want your students to have/improve

Develop an assignment idea or draft an assignment that targets that type of critical thinking

Be willing to participate in our 2018 critical thinking project

Slide 6

Think-Pair-Share (5-minute activity)

How would you describe one way of thinking critically that is important for your disciplinary field (or work)?

One minute: jot down a brief description

Two minutes each: share with a person at your table
Critical thinking is . . .

Not one thing – it’s a set of complex thinking activities that are purposeful, reasoned, and goal directed
Context-dependent; disciplinary-specific

See handout: definitions & SLO examples

See the handout: Critical Thinking: Teaching, Learning, and Assessing

Adapting  Generalizing  Reasoning
Analyzing  Hypothesizing  Recognizing
Categorizing  Identifying  Representing
Comparing  Illustrating  Solving
Creative thinking  Judging  Synthesizing
Critiquing  Modifying  Testing
Diagramming  Organizing  Translating
Evaluating  Planning
Experimenting  Questioning

These cognitive activities have been identified as aspects of critical thinking.
Slide 9

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<th>Adapting</th>
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A student learning outcome with these verbs = critical thinking outcome

Slide 10

Teaching & learning: **General principles**

Critical thinking is hard: belief preservation, bias, and blind spots dominate

Critical thinking learning is enhanced with . . .

A. Explicit instruction
B. Deliberate practice
C. Practice in context
D. Explicit instruction in transfer of CT from one context/situation

See the handout: *Critical Thinking: Teaching, Learning, and Assessing*
Teaching & learning: Assignment design tips

A. Explicit link to learning outcomes and rubric/grading criteria

B. Aim slightly above what students can do on their own

C. Meaningful beyond the classroom

D. Start with low-stakes, thinking activities and build to high-stakes critical thinking assignment

E. Include metacognitive activities (awareness of own thinking & processes)

Good resources: How People Learn; Engaging Ideas; and Classroom Assessment Techniques
Brainstorm (5 minute activity)

What critical thinking skills and knowledge do students need to be successful on this assignment?

2 minute brainstorm
3 minute sharing

See the handout: Peer Review (version 1) Assignment

Assignment Example #1

See the handout: Peer Review (version 2)
Example #2: Research Proposal

Key features
A. Authentic assignment with a high-degree of personal choice
B. Uses annotated models
C. Demonstrates how to read and take notes
D. A “scaffolded”, sequence of activities
E. Includes peer discussion & feedback and faculty feedback
F. Assignment directly aligned with outcomes and rubric/evaluation criteria

See handout: Research Proposal Assignment

Activity: create, revise, or plan an assignment

See handout

5 minutes: Create, revise or plan an assignment (see handout)

10 minutes: In pairs or groups of 3, share, get feedback, refine.

See the handout: Critical Thinking: Teaching, Learning, and Assessing—Activity Sheet
Q&A

Questions?
Unsure about next steps?
Concerns?

Q&A -- from a metacognitive perspective:

What do you already do that is similar to/supports what we discussed today?
What challenges do you expect to face when you give your assignment?
Is anything inhibiting you from giving critical thinking assignments?

Slide 18

Please complete an evaluation form.
We use your feedback to improve.

Thank you for being here!

Monica Stitt-Bergh
bergh@hawaii.edu

Christine Beaule
beaule@hawaii.edu
Critical Thinking: Teaching, Learning, and Assessing (Handout)

Critical Thinking (CT) Descriptions
A. The UH Mānoa CT Working Group adopted the Critical Thinking Assessment Test’s list of CT skills as their definition (https://www.tntech.edu/cat/about/skills):
   a. evaluating information;
   b. creative thinking;
   c. learning and problem solving;
   d. communication.
B. Appropriate use of relevant rules and procedures for reasoning in a discourse context (Bensley)
C. Reasonable, reflective thinking focused on deciding what to believe or do (Ennis)
D. The use of those cognitive skills or strategies that increase the probability of a desired outcome (Halpern)
E. A habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion (CT VALUE rubric)

These ways of thinking can be used to reason, reflect, explore, etc., in order to take action, reach a conclusion, reach a desired outcome, etc.

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Examples of CT-related Student Learning Outcomes
A. Apply analytical, problem-solving, business management and technological skills to everyday and discipline-related challenges (Tropical Plant and Soil Science)
B. Apply appropriate analytic methods to describe spatial patterns and associations in the human environment (Geography)
C. Apply appropriate quantitative and statistical techniques to economic analysis; conduct economic analysis using equations and graphs (Economics)
D. Communicate creative ideas and critical judgments through appropriate means (oral, written, practical) (Theatre)
E. Constructively critique their own and other’s intellectual and creative work (Creative Media)
F. Design and conduct experiments, as well as analyze and interpret data (Civil Engineering)
G. Generate & test hypothesis, make observations, and collect data in the laboratory & field (Botany)
H. Ongoing self-directed learning; use legitimate sources of evidence for decision-making (Nursing)
Teaching & Learning Critical Thinking (CT)

*General principles*

Critical thinking is hard because belief preservation, bias, and blind spots dominate.

Critical thinking learning is enhanced with . . .

A. **Explicit instruction**
   - Immersion is less effective than explicit instruction
   - When designing assignments, directly state the type(s) of the thinking required
   - In class and when using examples/models, draw attention to instances of that thinking by explicitly pointing to it, naming it, and concisely explaining it

B. **Deliberate practice**
   - When designing assignments, focus students’ intention on the task, give exercises/activities designed to improve, use a sequence of activities in which students gradually do harder tasks, and give students timely & accurate feedback on performance

C. **Practice in context**
   - Teaching abstract rules and thinking principles are less effective than teaching those rules and principles in context, that is, in practical applications
   - When teaching, explain to students how and why to apply an abstract rule/principle in a particular context or application. Also give counter examples of contexts in which it does not apply and state why it’s inappropriate

D. **Explicit instruction in the transfer of CT from one context/situation**
   - Transfer of knowledge and skill from one setting or task to another is not easy for humans
   - When teaching, clearly state how and why a type of thinking is appropriate for a particular context/situation and explain the contexts/situations in which the type of thinking is less or not at all appropriate.
   - When designing assignments, include metacognitive activities that help students with transfer. Examples of questions students can answer (pick and choose or develop your own):
     - What have you learned before that you can apply now to this assignment? Why will that work for this assignment?
     - What skills do you already have that will help you with this assignment? [can substitute *knowledge* for *skills*]
     - What new skills do you need to help you complete this assignment? [can substitute *knowledge* for *skills*]
     - In what other contexts/situations can XXX thinking rule/principle be applied?

---

**Context dependent**

Bensley points out that to evaluate the quality of evidence in psychology, a general rule is that well-controlled studies provide stronger evidence than poorly controlled studies. This is less to not at all relevant to critical thinking in other disciplines (e.g., art, literary studies).
Assignment design tips

A. Task is explicitly linked to learning outcomes and rubric/grading criteria
B. Aimed slightly above what students can do on their own
C. Meaningful beyond the immediate classroom setting
D. Start with low-stakes, thinking activities and build to a high-stakes critical thinking assignment ("scaffolding"; break a complex assignment into parts & students get feedback on the parts)
E. Include metacognitive activities (see also “D” above)

Students can answer and/or discuss questions such as these:

- What am I being asked to do? What strategies will I use? Why these strategies?
- Is the strategy that I am using working? Should I try a different strategy? Should I seek help?
- How well did I do? What strategy worked? Why do I think it worked? What didn’t work well? What could I do differently next time? What other types of assignments can I use this strategy for? How might this strategy be applied to tasks outside of school?

Resources for Teaching, Learning, & Assessing


References


Critical Thinking Project 2018 (Handout)

You’re invited to participate!


Who? Mānoa faculty and instructors who teach courses that emphasize critical thinking (CT) skills and have seniors enrolled.

Why? We want to (a) investigate student learning and (b) demonstrate that colleges and universities can evaluate learning without using standardized exams. This project uses existing evidence (i.e., authentic student work in the form of written work, exams completed as part of the curriculum, etc.). The results are reported in the aggregate (no individual faculty or student results) and are used for institutional- and program-level decision making.

How? Let the Assessment Office know you are interested: email airo@hawaii.edu. Participation details:

• You assign students a task that asks them to demonstrate critical thinking dimensions (see the CT VALUE rubric).
• We randomly select seniors from your course and ask you to email us their completed assignment (alternatives to emailing are available).
• You provide your assignment guidelines/instructions and complete a short information sheet.
• We redact the assignments and assignment guidelines.
• Trained faculty evaluate the student work using the CT VALUE rubric. Faculty scorers do not know the students’ names, your name, or your assignment guidelines.
• We report the aggregate findings; in addition, you, and only you, receive your students’ results.
• Faculty groups and others who work with general education discuss and use the aggregate findings to guide decisions and policies.

When? Let us know now if you can participate.

In April, the Assessment Office will send you a list of randomly-selected seniors. On or before Wednesday, May 16, 2018, you email or send these items:

(a) the student work of the selected seniors
(b) your assignment guidelines/instructions, and
(c) the completed information (cover) sheet.
Activity #1: Think-Pair-Share (5 minute activity)
How would you describe one way of thinking critically that is important for your disciplinary field (or work)? (1 minute)

Pair & Share (2 minutes each)

Activity #2 Brainstorm activity (5 minute activity)
What critical thinking skills and knowledge do students need to be successful on the assignment? List as many as you can in 2 minutes. Then, everyone at the table share one idea (3 minutes total).

Activity #3 Create, Revise, or Plan an Assignment (15 minute activity)
Take 5 minutes to create, revise or plan an assignment:
- students demonstrate their critical thinking skills
- explicitly linked to a CT learning outcome(s) and evaluation criteria (e.g., the CT VALUE rubric, an exam answer key)
- includes at least one low-stakes, building-block activity [“scaffolding”]
- includes at least one metacognitive activity such as students answer 1-2 questions that ask about their thinking processes/plans

Need help? Consider these questions:
1. What is one type of critical thinking that is highly valued in your field and you want students to improve or develop?

2. Which program learning outcome(s) addresses that type of thinking?

3. How will you evaluate students’ critical thinking skills and knowledge—a rubric? Exam answer key?

4. How will students demonstrate that type of thinking in a format that is valuable beyond the classroom? (e.g., a task that mirrors a professional or a community genre/task such as a policy paper or letter to editor)

5. What thinking skills and knowledge do students need to be successful on this assignment? Brainstorm a list and use the list to develop the assignment sequence with low-stakes, building-block, “scaffolded” activities.

6. What are your strategies to be explicit, give deliberate practice in context, and to teach for transfer?

7. What are your strategies to ensure that you aim slightly above what students can do on their own? How will you check what they already know, can do, believe?

Share your assignment (idea) in pairs or groups of three [10 minutes]. Help each other fine-tune ideas/assignments.
Peer Review Assignment Version 1 (Handout)
Humanities, 400-level course
Christine Beaule

The Peer Review Process

Assignment:
Provide critical feedback on another student’s paper draft to help them strengthen their argument and guide their revisions on their research paper.

Use Microsoft Word’s insert comments function, or write about a page of comments on your assigned paper draft that focus on:

- The strengths and weaknesses of the paper’s evidentiary support
- The significance of the argument
- The theoretical context offered for the argument
- The central claim
- Least important: editing concerns such as grammar, awkward phrasing, spelling errors, etc.

Email your peer review to both the author of your assigned paper, and me by [insert deadline date and time].

When you revise your own paper, make sure to carefully think about and respond to the feedback you’ve received from your peer reviewer and from me on your first draft. Please submit a cover letter with your final draft in which you explain how you revised your paper in some detail.
Peer Review Assignment Version 2 (Handout)
Christine Beaule, Humanities, 400-level course

The Peer Review Process

Deadline for peer review: Date and time
An important part of making your work public in academia is the peer review process. This time-honored tradition gives you (usually anonymous) feedback from several of your peers about your written work, with one or more opportunities to address their concerns and suggestions before publication (in this case, a draft to grade). Though at times frustrating, it can also be an extremely rewarding process in that things you thought were quite clear in your work may not be to new readers, while other things you thought were poorly executed may earn their praise. Each of you is working on a different argument than the others; in this way, you will get readers whose expertise is different, giving you truly fresh eyes with which to read your draft.

Peer review partners
Student A and student B. Student C and student D, etc.

I. FOCUS OF YOUR COMMENTS

Focus your comments not on mechanics (word choice, spelling and grammar, etc), but rather on three things:

1. Think critically about the central claim or main hypothesis the author asserts toward the beginning of their argument, and the broader topic or bigger research questions that the claim is tied to. Start your review by identifying or summarizing what you think the main argument is going to be after you’ve read the introduction. A common problem with first drafts is that, for example, I might start out saying that I’m going to build an argument that fear drove the excessively violent reactions to rumored conspiracies among slaves, but then my paper goes in a different direction after a few pages, focusing more on Mayan rituals. An outside reader can help point out where you went off track.

2. Indicate where you think the author needs to do a better job making use of particular evidence (direct quotes, paraphrased statements, quantitative data, main conclusions, etc. from others’ work). For example, I might be trying to make the point that multinational corporations function like Colonial powers in Latin America. And so the example of the United Fruit Company’s labor practices in Colombia might strike me as great evidence of how the company crowded out local competition from growers, and set the price of bananas on the international market. However, that connection won’t be clear to my reader. So I have to explain that I think the company’s practices imposed an artificial dependence on United Fruit for credit and access to the distribution system and markets abroad, and that these in turn were just like the restricted trade system set up by the Spanish during the 17th century. Where you, as a reader, don’t see a clear connection therefore between an author’s claim and any of her data, be sure to point that out.

3. Point out parts of the texts that you find vague, confusing, contradictory, too general, particularly strong, well-written, and so forth.

II. LOGISTICS

You have two options for how to comment on your peer’s draft. The first option is to use Microsoft Word’s “Insert Comment” function. To do this in Word, highlight the word, sentence, or section you’re reacting to, then click on the Review tab, and hit “New comment.” In earlier versions of Word, insert comment is under the insert tab. The advantage of this method is less typing; the part of the text that you’re reacting to is highlighted when you hover over a comment.

The second option is to type up your comments in a separate Word document, and save it as Yourname.Authorsname.doc (for example, if I’m commenting on William’s paper, I’d name the file
Kollmer.Beaule.doc). Aim for a full page of comments. In this case, you’ll have to describe which sections or sentences you’re reacting to; be specific and be detailed.

Regardless of which method you choose, I expect you to provide critical feedback that focuses largely on the strengths and weaknesses of the argument you’ve read. In fact, many of these drafts won’t have much of an argument at all, and that’s exactly where you need to brainstorm to come up with suggestions about how to create a narrow central claim and tie it into both larger questions as well as the detailed evidence your author has included. It is not enough to comment on the grammar, citations, or other lesser concerns. I want you to work hard to provide some useful feedback that will help your peer to improve the clarity, conciseness, and support for his or her argument.

As an author, if you are not satisfied with or have questions about the feedback you receive from your peer reviewer, please first try to contact him or her to ask for clarification (cc me on this email). If you don’t get a response or still don’t feel the comments are sufficient, you can seek a review from anyone else—a classmate, a Writing Workshop tutor, a friend or family member, etc. If you go this route, be sure to describe your sources of feedback in your reflections when you submit the final draft of your paper.

III. COVER LETTER

Please revise your paper using the feedback you have received from your student reviewer (and, if needed, outside reviewers), and myself. You will compose a page or so of final writing reflections explaining how you have incorporated this feedback and, where applicable, where you disagree with your reviewers’ suggestions or comments.

**What to include.** Include a section for each writing issue (not every comment, but each kind of writing move) your reviewers brought up (e.g., revising your central claim, fleshing out the theory section, interpreting your evidence, etc.). In your response, explain how you addressed each major writing issue your peer reviewers mentioned, referring to specific sections of the paper (or paragraph numbers) in the old and new versions where appropriate. You do not have to address every comment or make any specific revision suggested by a reviewer. However, if you decided not to change something in response to a reviewer’s comment, explain why. You can use single spacing for your cover letter. Please include it as the first page of your final draft, not as a separate document.

**Tips.** Remember that the writing reflections are a graded writing assignment that will take time and effort to do well. If done thoughtfully, this section will almost certainly help you improve your final essay. Some tips:

- As the writer, you are the one who decides what to revise and how. The peer review assignment encouraged reviewers to focus on explaining their responses as readers, rather than on making specific suggestions about how to revise your paper. But what if a reviewer did suggest specific revisions? In that case, consider what it was in your draft that led the reviewer to make the suggestion; talk to the reviewer again if you need to. You may choose to take whatever advice the reviewer gave, or you may decide that a different revision will more effectively address the underlying concern. Or you may decide not to revise at all in response to a comment—but be aware that this can be risky, especially if more than one of your readers expressed similar concerns.

- Make it obvious what comment you are responding to without the reader having to refer back to the first draft. For example, let’s say that a reviewer commented that you didn’t adequately justify your decision about X in the introduction. Rather than starting out your response with “I agree with that comment,” instead begin with something like this: “I agree (or disagree) that I did not adequately justify my decision to test hypotheses X with data from line of evidence Y in my methodology. I’ve responded by explaining how Y is a good way to test hypothesis X.”

- Explain your revisions and your rationale behind them. You do not have to go as far as cutting and pasting in excerpts from your draft and final version. But instead of just “I changed that paragraph” give a little more explanation, such as: “To address the reviewer’s comment that I hadn’t justified X in the methodology, I added Y. I think this is adequate justification because…”
Research Proposal Assignment—Critical Thinking Assignment Example (Handout)

**Research Proposal** (400-level research methods in education course)

In this assignment, you will propose a feasible research study that is of benefit to you and your school/workplace. You will reflect on your school/work setting and current issues; conduct library research and analyze & synthesize sources; select procedures (a research design), and propose a study. The culmination of your work will be a 2,500-4,000 word (10-12 pages) research proposal.

**Audience:** Colleagues/peers in education, including your school principal and district head—OR—peers in a setting of your choice

**Purpose:** The skills you will develop are highly valued in education, science, and social science because the research proposal is a common genre. Researchers (including teachers doing action research) use a research proposal to plan a study, get permission to carry it out, and/or to receive resources. This assignment builds on what you already know about research reports because it also extensively use library sources as supporting evidence and as a way to build reader confidence in the writer’s knowledge, competence, and awareness of dissenting viewpoints and alternative methods.

**Pattern:**

*See also the annotated models of completed research proposals and the Research Proposal Handout.*

- Title (twenty-five words or fewer)
- Abstract (150 words or fewer)
- Introduction with explanation of the issue, focus of study, value, and hypothesis or research question
- Literature review (APA Style Manual rules for citations)
- Context/setting and researcher qualifications (include biases if a qualitative design)
- Procedures (research design), including participants, instruments, treatment, analysis, timeline
- Limitations of the research design, analysis, and interpretation of findings
- Budget/resources
- Conclusion, including the significance of the study
- References

**Activities & Item Due Dates:**

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<th>Item Due Dates</th>
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<tr>
<td>Jan 30 Library visit; reading &amp; notetaking discussion</td>
<td>Feb 8 Annotated bibliography with 3 sources</td>
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<tr>
<td>Feb 13 Round-robin peer sharing &amp; feedback</td>
<td>Feb 15 Statement of the focus of your study</td>
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<td>Feb 20 Reading &amp; notetaking modeling</td>
<td>Mar 1 Literature review matrix</td>
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<td>Mar 13 Brainstorm session: study significance, benefits, challenges &amp; solutions</td>
<td>Mar 15 Letter to colleagues on study significance, benefits, challenges and addressing them</td>
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<td>Mar 19-23 Conferences on research design</td>
<td>Apr 3 Research design description</td>
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<td>Apr 17 Peer review</td>
<td>Apr 17 Draft of research proposal</td>
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<td>Apr 24 Revised research proposal</td>
<td>Apr 24 Revised research proposal</td>
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<td>May 1 Group discussion of common issues</td>
<td>May 10 Final research proposal due</td>
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Standards and criteria:
See also the Rubric.

Your final research proposal should demonstrate that you can
- comprehensively **describe and delimit** a specific educational issue that you will study (explain issues)
- clearly **state** the focus of your study in the form of a hypothesis or research question (your position)
- conduct and write a literature review in which sources are **analyzed, synthesized, and framed** to provide evidence that supports your hypothesis/research question and research design (evidence)
- **identify and analyze** assumptions of experts and of your own as well as assumptions of particular research designs; address opposing viewpoints (evidence; context & assumptions)
- **identify limitations** of your proposed study (conclusions)
- **draw conclusions** from the literature review regarding (a) the value of the proposed study and its future usefulness; (b) the appropriateness of the proposed research design; and (c) a feasible timeline and resources needed (conclusions)

This assignment allows you to practice and demonstrate these program learning outcomes:
- Develop research questions and select research designs/methods
- Analyze and synthesize information and findings
- Communicate in writing
Critical Thinking VALUE Rubric
for more information, please contact value@aacu.org

The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can by shared nationally through a common dialog and understanding of student success.

Definition: Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

Framing Language: This rubric is designed to be transdisciplinary, reflecting the recognition that success in all disciplines requires habits of inquiry and analysis that share common attributes. Further, research suggests that successful critical thinkers from all disciplines increasingly need to be able to apply those habits in various and changing situations encountered in all walks of life.

This rubric is designed for use with many different types of assignments and the suggestions here are not an exhaustive list of possibilities. Critical thinking can be demonstrated in assignments that require students to complete analyses of text, data, or issues. Assignments that cut across presentation mode might be especially useful in some fields. If insight into the process components of critical thinking (e.g., how information sources were evaluated regardless of whether they were included in the product) is important, assignments focused on student reflection might be especially illuminating.

Glossary: The definitions that follow were developed to clarify terms and concepts used in this rubric only.
• Ambiguity: Information that may be interpreted in more than one way.
• Assumptions: Ideas, conditions, or beliefs (often implicit or unstated) that are "taken for granted or accepted as true without proof." (quoted from www.dictionary.reference.com/browse/assumptions)
• Context: The historical, ethical, political, cultural, environmental, or circumstantial settings or conditions that influence and complicate the consideration of any issues, ideas, artifacts, and events.
• Literal meaning: Interpretation of information exactly as stated. For example, "she was green with envy" would be interpreted to mean that her skin was green.
• Metaphor: Information that is (intended to be) interpreted in a non-literal way. For example, "she was green with envy" is intended to convey an intensity of emotion, not a skin color.
**CRITICAL THINKING VALUE RUBRIC**

For more information, please contact value@aacu.org

**Definition:** A habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Capstone 4</th>
<th>Milestones 3</th>
<th>Milestones 2</th>
<th>Benchmark 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation of issues</strong></td>
<td>Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.</td>
<td>Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.</td>
<td>Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.</td>
<td>Issue/problem to be considered critically is stated without clarification or description.</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.</td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.</td>
<td>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.</td>
<td>Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.</td>
</tr>
<tr>
<td><strong>Influence of context and assumptions</strong></td>
<td>Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.</td>
<td>Identifies own and others' assumptions and several relevant contexts when presenting a position.</td>
<td>Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).</td>
<td>Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.</td>
</tr>
<tr>
<td><strong>Student's position</strong></td>
<td>Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.</td>
<td>Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.</td>
</tr>
<tr>
<td><strong>Conclusions and related outcomes</strong></td>
<td>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.</td>
<td>Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.</td>
</tr>
</tbody>
</table>