Embedding Critical Thinking in the Curriculum: Research-Oriented Learning Strategies that Foster Engagement, Critical Thinking, and Deep Learning

Guadarrama, Luis

Embedding Critical Thinking in the Curriculum

Research-Oriented Learning Strategies that Foster Engagement, Critical Thinking, and Deep Learning

Critical Thinking and Information Literacy share the same learning outcomes. Both instruct students on:

1. Identifying, and focusing (and appropriately reformulating) the issue, question, or work assignment;
2. Identifying and considering the influence of context and assumptions, including biases;
3. Presenting, assessing, and analyzing appropriate supporting data or evidence/sources;
4. Integrating diverse relevant perspectives;
5. Developing, presenting and communicating own perspective, hypothesis, or position;
6. Identifying and assessing conclusions and consequences;
7. Communicating effectively in one or more modes. (May include articles, posters, lectures, oral presentations, interviews, websites, consultations, discussions, demonstrations, performances, PowerPoint, artwork, film.)

(Corey M. Johnson , Elizabeth Blakesley Lindsay & Scott Walter, 2008)

Center for Teaching, Learning, and Technology
Washington State University

Critical Thinking

Information Literacy

The connection between information literacy and critical thinking is clear. Both, for example, focus on evaluating the credibility of an information source, and on evaluating evidence of the authoritative nature of a source. Pedagogical similarities between information literacy instruction and critical thinking instruction exist as well in that both are effectively taught through attention to active learning, and both have been highlighted as skills well suited for problem-based learning (Bean 2001; Cheney 2004 in Gradowski, Snavely, and Dempsey 1998).

'A holistic approach to teaching for critical thinking should involve a set of appropriate goal-oriented assessment tasks that enable students to manipulate cognitive skills. **On assessing critical thinking:**

•Select both formal and informal assessment tasks that enable students to apply problem-solving processes and other dimensions of critical thinking

•Assignments should incorporate real-world scenarios

•Students must plan around a time frame, gather information, collaborate, and consider feasible alternatives or trouble shoot when they encounter hurdles.

•Certainly a paper that requires students to annotate, outline, summarize, synthesize, contextualize, explore the use of figurative language, identify patterns of opposition and evaluate the logic of arguments before taking a reasoned perspective and arriving at a conclusion will engage students in similar critical thinking processes.' (Jonassen, 2010; Ramsey et al., 2009; Ikuenobe 2001 in Thompson, C., 2011)

Though often discussed as separate entities, research has shown that there is a strong connection between the development of critical thinking, problem solving, and information literacy skills (D'Angelo, 2001, p. 303; Johnson, Lindsay & Walter, 2008, p. 236; Weiner, 2012, p. 287).

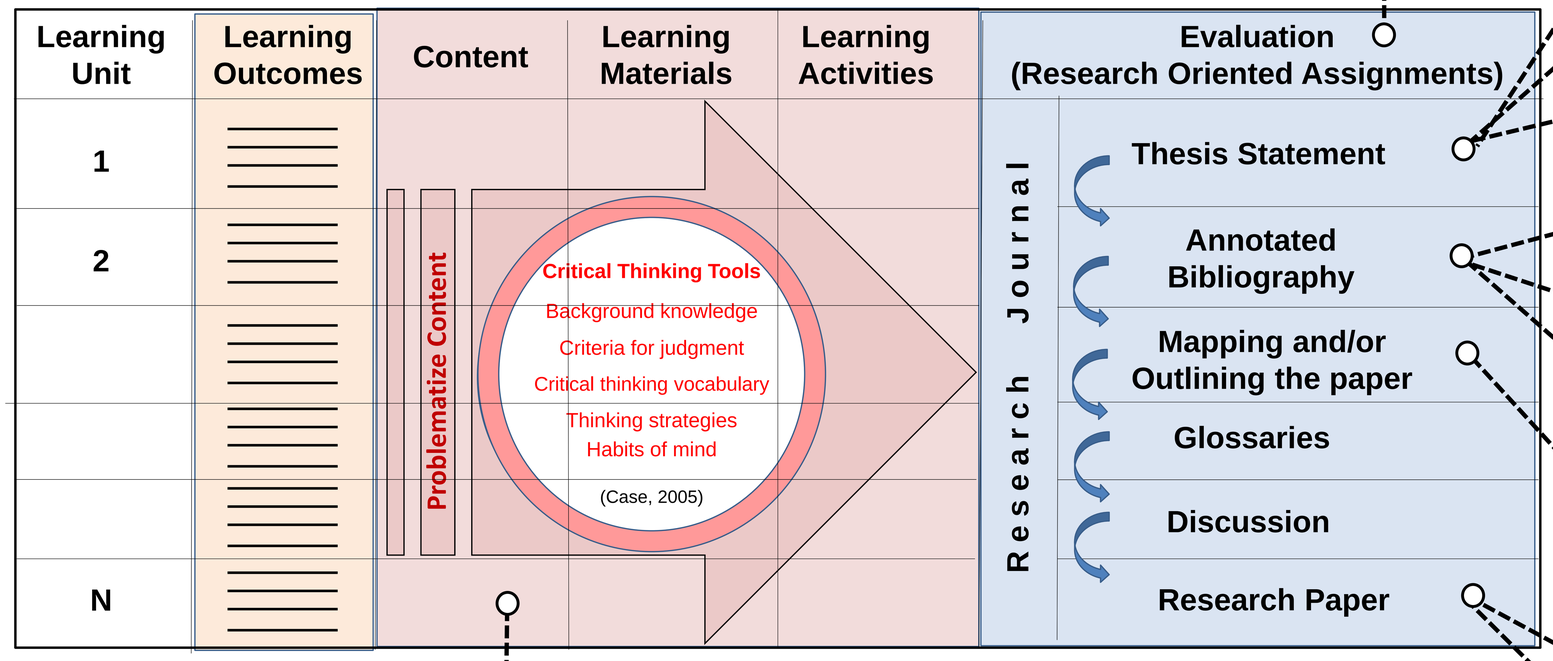
'All the Information Literacy Competency Standards for Higher Education (ACRL 2000) **require that students apply critical thinking skills** to their definition of the research question, their evaluation of information that they find, and their use of the information. A key aspect of critical thinking is that students address not only their own perspectives, but also fully understand and address the perspectives of other people involved or affected, as well as the perspectives of the authors of any supporting materials. I**t is hard to imagine achieving significant information literacy skills without also demonstrating effective critical thinking skills.' (**Johnson, C. M., Lindsay, E. B. & Walter, S., 2008).

[The] definition of information literacy reflects many of the common aspects that appear in the accepted definitions of critical thinking, including the ability to identify need, access, critically evaluate, synthesize, and utilize information for the completion of specific purposes (ACRL, 2000).

•Open Ended Assignments : Allow students to think about specific questions related to their own research/projects/assignments. Students may become engaged in learning new ideas and begin to own their research.

•Break down the research process into assignments: Allow students to see progress and purpose in their work (engagement/motivation); may engage students in deeper reflection and critical thinking; encourage students to take greater ownership of their learning (Hodgson, Paula; Pang, Marco, 2012)

•Shift from Summative to Formative: Provides instructors with an accurate representation of student work and gains in terms of knowledge and skills throughout the course (Vonderwell, Selma; Boboc, Marius, 2013).



Understanding Your Assignment

Writing a Thesis Statement

Identifying Scholarly Articles (Peer Reviewed)

Searching Tools and Search Strategies

From Critical Reading to Critical Writing

Annotated Bibliography

Mental Maps and Outlines

Academic Integrity: Avoiding Plagiarism

Writing the Research Paper

Similar to discussions surrounding critical thinking, information literacy skills are not relegated to only certain disciplines, instead holding importance as skills needed within all disciplines (Weiner, 2010; Weiner, 2012, p. 288).

Teachers can help students understand the subject matter, as opposed to merely recall it, by problematizing the subject matter. […] If a situation is not problematic (i.e., there is only one plausible option or a correct answer is obvious) then it does not call for critical thinking. (Case, 2005)

Students who receive information in a passive or transmissive manner are less likely to understand what they have heard or read about than are students who have critically scrutinized, interpreted, applied or tested this information. Presenting subject matter in the context of a problem or an issue is more motivating to students and more likely to develop deeper understanding. (Alberta Education, 2008)

Luis Guadarrama
Learning Designer
Centre for Learning Design and Development
luisg@athabascau.ca

Athabasca University

References:

Alberta Education (2008) Embedding Critical Thinking Into Teaching and Learning. www.learnalberta.ca. Retrieved on May, 2015

ACRL (2000). Information literacy competency standards for higher education. Retrieved from http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/standards.pdf

Case, Roland (2005) Moving Critical Thinking to the Main Stage. Education Canada (Spring 2005) 45(2) 45-49)

Corey M. Johnson , Elizabeth Blakesley Lindsay & Scott Walter.(2008) Learning More About How They Think: Information Literacy Instruction in a Campus-Wide Critical Thinking Project, College & Undergraduate Libraries, 15:1-2, 231-254, DOI: 10.1080/10691310802177267

Thompson, C. (2011) Critical Thinking across the Curriculum: Process over Output. *International Journal of Humanities and Social Science.* Vol. 1 No. 9 [Special Issue – July 2011.

Wright, I. (2002) Challenging Students with the Tools of Critical Thinking, The Social Studies, 93:6, 257-261, DOI: 10.1080/00377990209600175