

CRITICAL THINKING

WHAT IT IS AND HOW TO TEACH IT

A Teaching Resource from the Walker Center for Teaching and Learning



WHAT IS CRITICAL THINKING?

Often this phrase is undefined, students are confused by the concept, and assignments do not necessarily teach how to think critically in specific ways.

Here, UTC faculty talk about Critical Thinking and how to teach it.

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CRITICAL THINKING

HABITS OF THE CRITICAL-THINKING MIND

Some would say that critical thinking is as old as education itself. After all, Socrates prodded his students to question their own ideas — though most of his students tended to run away! Critical Thinking (CT) remains all the rage: though we don't usually take time to define the phrase with our students. Socrates would not be happy about that!

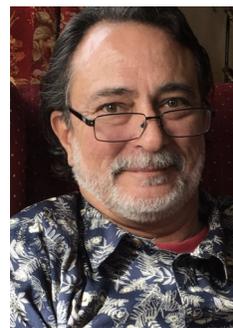
At UTC, few are aware that the school itself, just a few years ago, took a stab at defining CT. Here's what they came up with as part of the *Think / Achieve: Quality Enhancement Plan* (2011):

Critical thinking is the habitual practice of raising questions, identifying problems, analyzing existing information, creating innovative solutions, and reflecting on the process and the product as a means of constant improvement.

One can nitpick a bit (as good critical thinkers ought!). We might add something about cultivating a willingness to be self-critical and open to challenging one's own preconceptions; we might talk about the weighing of evidence; and we might underscore the centrality of "sound reasoning" beyond merely "raising questions."

Still, any definition of critical thinking must be a work in progress. What's perhaps most important is to be part of an institution and community that is willing to forge its own definitions and debate the standards for CT. And so the conversation goes on in the pages of this WCTL resource document. Perhaps, we might update Socrates and say: "The unexamined educational life is not worth living!"

Meet the Faculty



David Pleins
Walker Center for
Teaching &
Learning

CRITICAL THINKING

QUESTION EVERYTHING

Skepticism: I like to keep things simple, so critical thinking for me, basically, is skepticism. Question everything. Similar to discussions, I think critical thinking is a skill that can be acquired. I guess as instructors, our optimistic premise is that students are already proficient in this skill, however, I think this is as much a myth as the concept of "digital natives." Considering the location of our school, critical thinking may not only NOT be in the background of our students, it is quite possible that the concept itself had been discouraged in their earlier education.



Meet the Faculty



Dominik Heinrici

English

Refining the Questions: Just doing the basic research projects in ENGL 1010 and 1020 has been very effective in encouraging students to view topics from various perspectives and to ask questions. In my upper division courses, I work on refining these questions. When discussing literature, I think my classes are more a dialogue with my students, rather than a lecture. When I first present a text, I give my students a list of "guided reading questions," which highlight specific passages we focus on in class. Then, my students write a weekly reflection paper, in which they present their own questions we did not cover in class, and we return to a text. I think this recursive approach is very effective in my field. (Also, I really like the Socratic approach to teaching.)

CRITICAL THINKING

DOES THIS MAKE SENSE?

In my discipline, critical thinking means asking questions, looking for answers, and evaluating the answers from the very generic perspective: "Does This Make Sense?"



Models: My students are often very good at using pre-existing mathematical models to find numerical solutions to problems, but I want them to challenge the formulas — why do we accept this model under these circumstances and not the other? What are the underlying assumptions of each and are their circumstances where they cannot be made?

Big Picture: Moreover, I want them to be able to see the big picture — how to apply a set of skills to answer their own questions and self-assess their solutions. For example, if they are trying to figure out how diverting water from a stream for agricultural irrigation impacts streamflow, then they should be able to gauge — based on their fundamental knowledge of the system — whether their answer makes sense. Is the amount of water increasing where it should be increasing? Decreasing where it should be decreasing?



Meet the Faculty



Stephanie DeVries

Geology

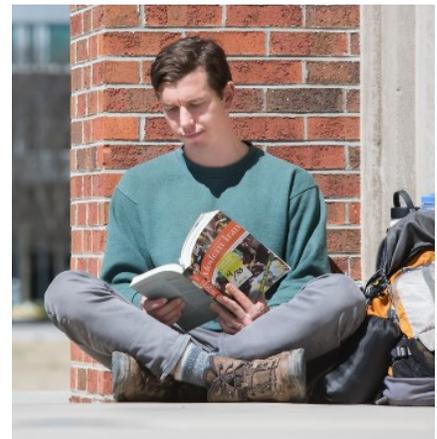
Frankly, this is an area of teaching that I am still developing. I am working on several approaches and what I have seen this semester has given me a number of ideas for new ways to encourage students to think more critically about how to apply the skills they are learning.

CRITICAL THINKING

GOING FURTHER AND DEEPER

I often try to explain critical thinking to my students as going "further" or "deeper" with their analysis. It depends (from my perspective) on being able to move past surface-level understandings of texts (whether those are primary or secondary sources; written, audio, visual; etc.) and question the motives and meanings that underpin the text. To help students access this, I use a "Four Reads" technique, in which I encourage them to work through sources four times. Students often think (initially) that this means I want them to read the source four times from start to finish, which is not a reasonable request and not something that I'm pushing. Instead, I have them "interact" with the text four times with four very different goals.

Context: First, students read for "context." This means that they might pay only very minimal attention to the text itself, and instead are trying to find the vital information about the source: who wrote it, when was it published, where was it published, in what language, etc. All of this is critically important to starting to make sense of the motivations behind the text.



Argument: Second, students read for "argument." In this read, they scan the text in order to pull out the "one main idea." I tell students that if they were going to give a one sentence summary of the author's intention to someone who had never seen the text, what would they say? What is the main point that the author wants to communicate to the audience?

CRITICAL THINKING

GOING FURTHER AND DEEPER

Evidence: The third read is focused on "evidence." This time, armed with context and argument, students work through the text more systematically and identify how they know what the author's argument is. This means looking for information that the author uses to justify their position, but not just explicitly. It also means paying attention to the assumptions and unspoken beliefs that the author uses to support their claims.



Questions: Finally, the fourth read is another quick scan to identify "Questions" that they have with the text. What doesn't make sense? What doesn't add up? What makes them feel uncomfortable or uncertain? All of these doubts, and the foundational work we've already done identifying the context, argument, and evidence, help students transition from passive consumers of information to active and critical interpreters.



At its best (which admittedly, doesn't always happen), this Four Reads technique doesn't take students much longer than slogging through a text without purpose, but produces far more insightful results.

Meet the Faculty



Edward Brudney

History

CRITICAL THINKING

NOT TAKING INFORMATION AT FACE VALUE

For me, critical thinking is the ability to analyze and evaluate information and the application of abstract thinking or reasoning. This requires a certain level of inquisitiveness, so that one does not just take information at face value. One particular assignment that my research students complete, which involves critical thinking, is an article critique learning activity.

In this assignment, students evaluate a research article by answering a number of questions pertaining to that article. These questions help students to evaluate information, such as the researchers' qualifications, bias in the study, limitations of the research study, the sample size (and its adequacy), ethical practices used in the research, use of operational terms and a theoretical framework, and the use of randomization.

By giving the students specific questions to consider when critiquing a research article, they are taught important aspects of critical thinking. Overall, these students are able to practice abstract reasoning and critical thinking when completing such a learning activity.

Meet the Faculty



Leslie Moro
Nursing

ANALYZING AND ASSESSING

Meet the Faculty



Mark Johnson
History

When I define critical thinking, I think about analyzing a text, image, or material with its creator, its audience, its argument, and its evidence in mind. In my Research and Writing in History class, I do a much better job of scaffolding assignments for them to practice critical thinking skills, and I need to definitely improve my assignments in my survey course to give them more practice time. In Methods, they constantly practice analyzing both primary and secondary sources with these four things in mind. Eventually, they start to assess the validity of arguments and evidence.

CRITICAL THINKING

ANALYZE, EVALUATE, MAKE CONNECTIONS

I define critical thinking as the ability to analyze and evaluate information and make connections between different pieces of information. This is something that comes up often in libraries, and I have used an activity similar to Leslie's assignment to help encourage critical thinking skills. I give the class an article that I tell them is unreliable and ask them to come up with the reasons it is unreliable. Without being asked, students will start looking for other resources to back up their reasons, drawing connections to other information sources while evaluating this source.

Meet the Faculty



Sarah Kantor
Library

WHY? AND HOW?

I believe that critical thinking involves asking simple questions like "Why?" and "How?" and then trying to understand the answers. If someone gets the logical flow of a concept and can visualize it, then I believe that the person is thinking critically. I also think that having and understanding multiple perspectives about the same thing is also important for critical thinking. It broadens the ability of a person to comprehend and convey information in a comprehensible and concise manner.

Meet the Faculty



Nilesh Sah
Finance &
Economics

Finance is generally math-heavy and students often get bogged down by formulas and calculations. I always encourage my students to try to understand the meaning of the "final number" rather than simply memorize the formulas/calculation. I believe that students appreciate this concept-oriented approach that I follow. This approach helps students understand the logical flow of concepts and visualize their applicability in the real-world.

CRITICAL THINKING

CRITICAL THINKING AND CRITICAL MAKING

Life Skills: Critical thinking is a life skill, so it applies to more things than what exists in the typical academic formats. I bring critical thinking into the classroom though what is referred to as critical making. The thinking process is the same, but it is involved with some form of hands-on making.



Conscious Reflection: Usually this term means directing critical thinking into the creative process of a work of art or design, but I expand the term a bit beyond its original usage. I've found that in investigating a thing—an object, a place, a person—through conscious and reflective interaction is a powerful means for innovative thought. It allows for making disparate connections.

Satire: Alongside asking students to investigate something from all sides, I encourage them another way. Typically, there will be some students who come back with subversive or joke-y observations, and I encourage these students. These are opportunities for students to realize that critical thinking applies to their everyday thoughts and interactions. I ask them consider if their observations can be turned into pointed criticism or satire.

Meet the Faculty

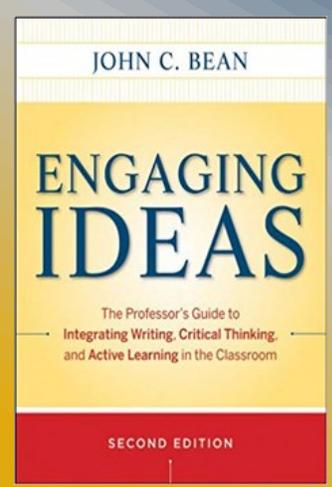
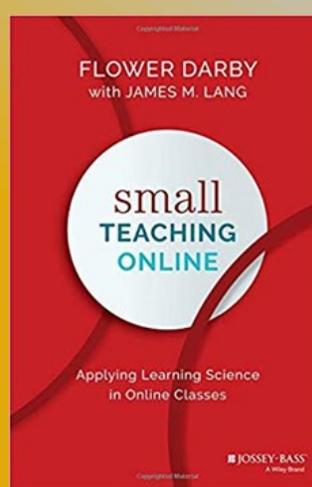
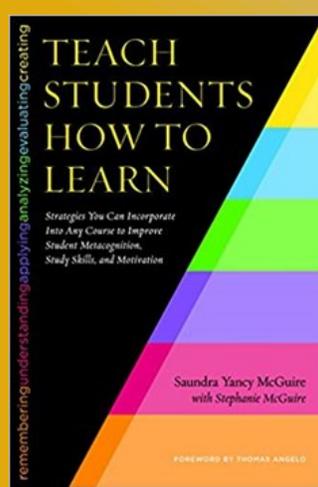
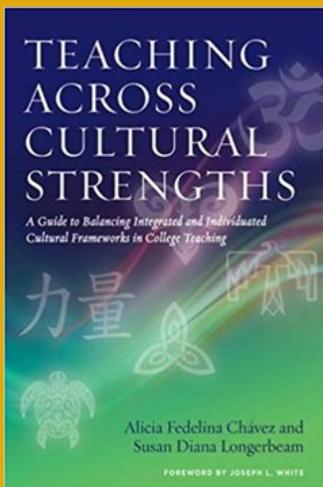
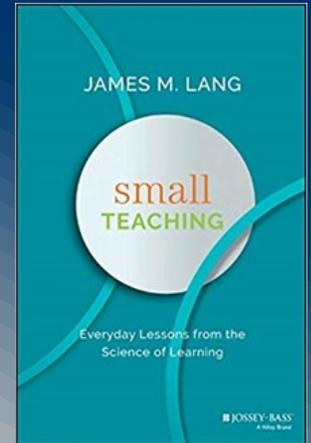
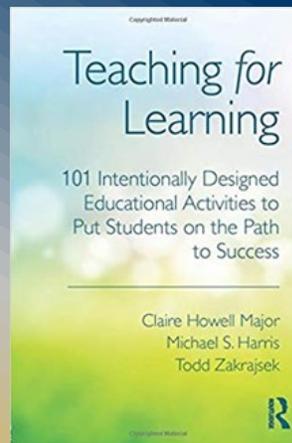
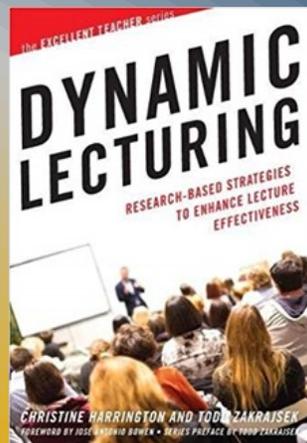
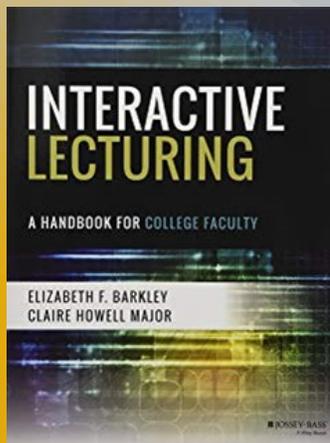
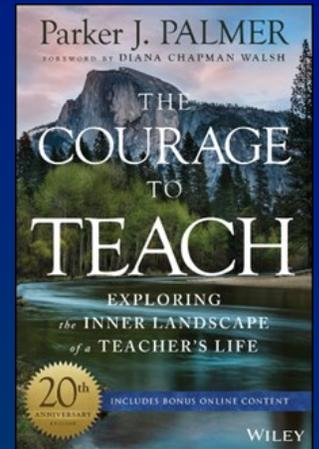
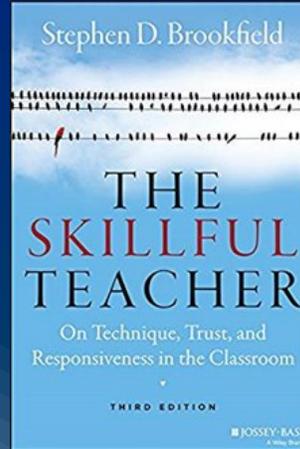
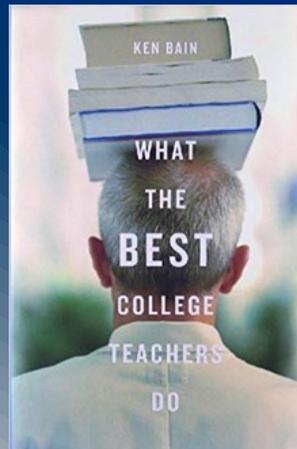
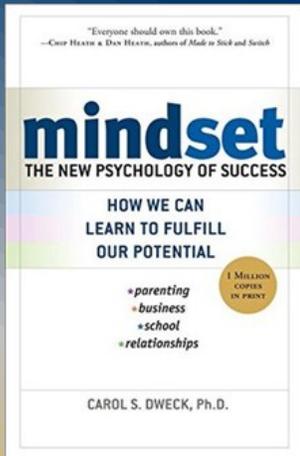


Derek Witucki

Art

Pedagogy Books that Engage & Inspire

(Each image contains a publisher link for further information.)



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