

Can colleges truly teach critical-thinking skills? (essay)

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Higher Ed's Biggest Gamble

Whether we can actually teach students critical-thinking skills is one of the most overlooked and misunderstood issues in higher education today, argues John Schlueter.

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By

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“The university seeks to foster in all its students lifelong habits of careful observation, critical thinking, creativity, moral reflection and articulate expression.”

“... University fosters intellectual inquiry and critical thinking, preparing graduates who will serve as effective, ethical leaders and engaged citizens.”

“The college provides students with the knowledge, critical-thinking skills and creative experience they need to navigate in a complex global environment.”

These are but a tiny sampling of the mission statements from higher education institutions around the country where critical thinking is a central focus. Indeed, in many ways, critical thinking has become synonymous with higher education. Yet we have not found evidence that colleges or universities teach critical-thinking skills with any success.

The study that has become most emblematic of higher education's failure to teach critical-thinking skills to college students is Richard Arum and Josipa Roksa's *Academically Adrift* (2011). The researchers found that college students make little gain in critical-thinking skills, as measured by students' scores on the Collegiate Learning Assessment. This study [has been criticized](#) for relying too much on the CLA, but that overlooks a much more fundamental issue underscored by a growing body of research: we don't know what critical thinking actually is, and we can't be sure that it even exists.

Those of us who work in higher education have assumed that we know what critical thinking is -- how could we not? Don't we see it happening every day? Don't we do it? Yet, if we realize that "critical thinking" implies a set of general thinking skills that transfer from one subject or domain to another, then the task of identifying exactly what those skills are becomes extremely difficult, and perhaps impossible, to accomplish.

It's becoming increasingly clear that higher education has gambled on critical thinking, and it makes sense: given that so much information is accessible via digital technology, and given the rising costs of tuition, classrooms must move beyond being places where content is delivered and become places where students learn how to process that content -- or, in other words, where they learn to think.

The question remains, however, can we actually teach students that skill?

The Thinking Skills Debate

The debate over whether or not general thinking skills, or GTS, actually exist is well traveled within a relatively small circle of researchers and thinkers, but virtually unknown outside of it. Given our belief in the importance of critical thinking and our assumption that students learn it, I would argue that this debate is one of the most overlooked and misunderstood issues in higher education today.

As the name implies, GTS are those skills that supposedly transfer from one discipline to another. A key question in the debate, therefore, is whether thinking skills can exist independently from discipline-specific content in a meaningful way such that transfer is possible. [Writing on this](#), Tim John Moore, a senior lecturer at the Swinburne University of Technology in Australia, called this "the generalizability debate."

On one side are the generalists, who believe "critical thinking can be distilled down to a finite set of constitutive skills, ones that can be learned in a systematic way and have applicability across all academic disciplines." Some notable proponents of this position are Robert Ennis, emeritus professor of philosophy of education at the University of Illinois; Peter Facione, former provost at Loyola University of Chicago; and Richard Paul, director of research and professional development at the Center for Critical Thinking.

On the opposing side are specificists, or those who argue that "critical thinking ... is always contextual and intimately tied to the particular subject matter with which one is concerned." Thinking, in other words, is always about *something*. John McPeck, professor of education at the University of Western Ontario; Daniel T. Willingham, a professor of psychology at the University of Virginia; and, to a certain degree, Moore himself have defended the specificists' position.

The generalist position, the one that many of us simply assume to be true, is the philosophical basis for the stand-alone, generic "thinking skills" course, in which students supposedly learn skills that *transfer* across subjects and domains. But [Daniel Willingham](#) points out that evidence shows that such courses "primarily improve students' thinking with the sort of problems they practiced in the program -- not with other types of problems." That suggests that it is extremely difficult, if not impossible, to separate the thinking skill from the content. In other words, Willingham argues, critical thinking is only possible after one acquires a significant amount of domain-specific knowledge, and even then, it's no guarantee.

As educational researcher Stephen P. Norris wrote in [Teaching Critical Thinking](#): "There is no scientific legitimacy to [the] claim that critical-thinking ability involves ability to control for content and complexity, ability to interpret and apply, and ability to use sound principles of thinking. If anything, scientific evidence suggests that human mental abilities are content and context bound, and highly influenced by the complexity of the problems being addressed."

More recent research that Moore has conducted continues to support the finding that the existence of a set of thinking skills applicable across disciplines is indeed dubious. In [Critical Thinking and Language](#), he explored how critical thinking is understood and taught by faculty from a range of disciplines at an Australian university. While he outlined certain relations among disciplines, he found nothing to suggest that the complexity of those relations could

be reduced to a core set of cognitive skills.

Again, given the rising cost of education and the increasing accessibility of information, instructors and professors must move beyond being deliverers of content to remain relevant. Yet, what to do if the research is telling us that teaching GTS is extremely difficult, if not impossible?

Moving Forward

If higher education is to come to terms with its promise of producing critical thinkers, it must take some specific measures. First, no matter what they teach, professors must become much more familiar with the thinking skills debates occurring in the cognitive science, educational psychology and philosophical domains. In fact, if institutions disseminated essential readings in this area as a sort of primer to get people started, it would be time and money well spent.

With a wider appreciation of the debate, faculty members must then begin to think about thinking within the context of their own disciplines. It does not make sense to impose some set of critical-thinking skills onto a subject area independent of the content being taught. Rather, professors of literature, science, psychology, economics and so on must reflect on how they think as scholars and researchers within their own disciplines -- and then explicitly teach those cognitive processes to students. If there is one thing that we know for sure, it is that thinking skills, general or otherwise, can't be learned if they're not taught in as overt a manner as other content in college courses.

Finally, we need to adjust the metaphor of "transfer" that drives how we view thinking skills in general and critical-thinking skills in particular. That metaphor leads us to look for a packaged set of thinking skills that apply with equal relevancy to virtually any situation or domain, when, while still debatable, it seems increasingly clear that no such skills exist.

When it comes to thinking skills, it would be much more productive if we stop thinking "transfer" and start thinking "overlap." That is, once thinking skills become more explicitly taught, especially in general education classes, both professors and students will notice how thinking in the context of one domain (say, economics) overlaps with the kind of thinking processes at work in another (biology).

Moreover, the metaphor of overlap -- like a Venn diagram -- makes the differences between sets of thinking skills as instructional as the similarities. So, as thinking skills become explicitly taught in different subjects, the student, proceeding through college, will gather overlapping investigative experiences based on his or her efforts to employ said thinking skills in various courses. The student can then manage those overlapping experiences as a kind of portfolio that shows him or her how content is processed and problems are solved. If a core set of thinking skills can be distilled from this portfolio, great. If not, the student still has a rich picture of how different ways of thinking overlap, even if they are always tethered to a specific domain or problem.

Ultimately, we in higher education must recognize that money is on the table. We have gambled on critical thinking, and if we are not to lose our shirts on this bet, we can no longer expect students to magically become critical thinkers. Instead, we must move toward a pedagogy that foregrounds the explicit teaching of thinking skills.

Bio

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