

# Research Says

## Teach Critical Thinking to Teach Writing

Writing may help students develop their critical thinking skills, but writing does not necessarily teach critical thinking.

Years ago, fresh out of college and armed with a handful of new neckties and a head full of good intentions, I found myself teaching a course for college freshmen titled “Thinking and Writing.” As its title would suggest, the course was predicated on the notion that good writing and thinking are linked. My task, and that of the other graduate students who taught the class, was to help students become better thinkers and writers so they could deal with the intellectual rigors of college.

Our faculty advisor warned us, “B papers will give you the most trouble.” Critical feedback on C or D papers was pretty straightforward. The challenge lay in responding to grammatically correct, precisely written papers that conveyed little original thought. He warned us, too, of the opposite problem: Sloppy papers that nonetheless demonstrated more critical thinking than the carefully penned essays did.

Although that was more than 20 years ago, not much appears to have changed in terms of high school graduates’ critical-thinking ability. Since 1992, the percentage of U.S. high school seniors testing at advanced levels on the National Assessment of Educational Progress reading test—demonstrating the ability to not only comprehend text, but also to analyze and evaluate it—has hovered at around 5 percent (National Center for Education Statistics, 2011).

Conventional wisdom holds that one of the best ways to improve students’ critical-thinking skills is to teach them to write (Quitadamo & Kurtz, 2007). Yet the paradox of well-written, poorly reasoned student

papers might lead us to wonder, What exactly, is the link between critical thinking and writing?

### Critical Thinking Is Difficult

To answer this question, it’s useful to know that as far as cognitive psychologists are concerned, critical thinking doesn’t come easily for anyone. Consider the following word problem: *A bat and ball cost \$1.10. The bat costs one dollar more than the ball. How much does the ball cost?*

A study conducted by Nobel Prize–winning psychologist Daniel Kahneman (2011) found that fully 50 percent of undergraduates at Harvard, MIT, and Princeton and 80 percent of students at other colleges answered this problem incorrectly. That’s because many of us jump reflexively to the wrong answer: 10 cents. (If we slow down and do

the math, we see that the correct answer is 5 cents.)

From his synthesis of decades of research, Kahneman has concluded that human thinking comprises two mental systems. System 1 engages in automatic (fast) thinking; among other things, this system helps us read and write words effortlessly, gauge the distance of objects, and answer simple math problems. System 2 entails more effortful (slow) thinking, such as focusing on a conversation in a noisy room, comparing products when making a purchase, and determining the validity of a complex argument. The trouble is, our brains are—in a word—lazy, says Kahneman. We default to System 1, and only with effort power up System 2. In short, critical thinking requires effort and doesn’t



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spring automatically from a pen moving across paper.

### Research Is Limited on the Writing-Thinking Link

Only a few studies to date have actually examined the link between critical thinking and writing (Quitadamo & Kurtz, 2007). In an early study, Langer and Applebee (1987) observed that “process-oriented approaches to writing instruction [such as guiding students through brainstorming, journaling, and reviewing peers’ work] have been relatively ineffective in helping students to think and write more clearly” (p. 7). However, their small but in-depth study suggested that properly designed writing assignments could support higher-level thinking.

They recorded students engaging in think-alouds as they completed three different types of writing assignments

about social studies texts: taking notes, answering study questions, and writing an analytical essay. When answering study questions, students engaged in fragmented, low-level recognition and recall. When taking notes, they focused on larger concepts but still failed to make their own sense of the content. Only essay writing caused them to think critically—synthesizing, hypothesizing, and evaluating ideas.

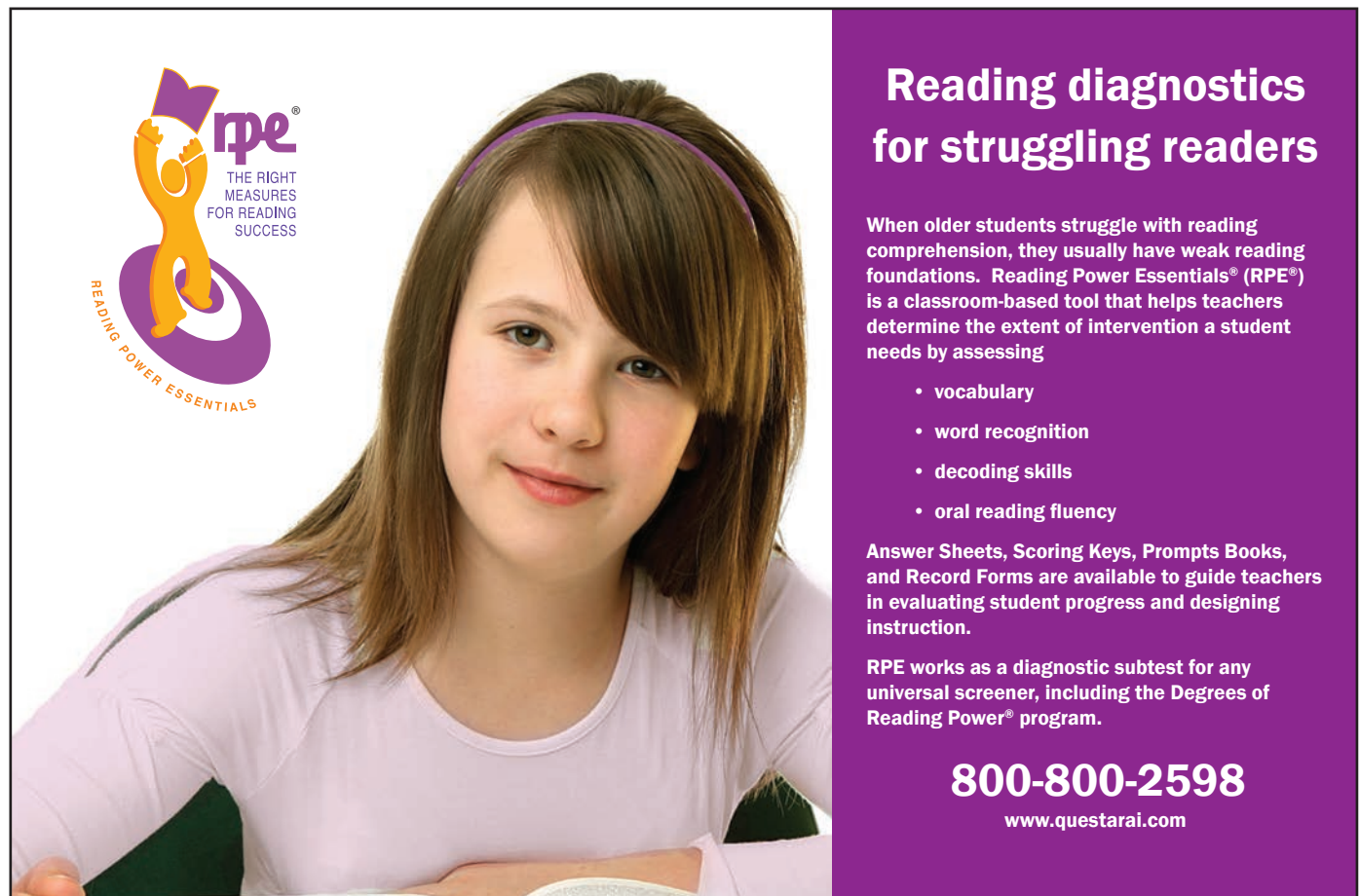
Building on this evidence, a more recent study (Quitadamo & Kurtz, 2007) randomly assigned a group of 310 college biology students to either write a weekly analytical essay or be quizzed weekly on what they had learned. To determine how these conditions affected higher-order thinking, students also took the California Critical Thinking Skills Test before and after the intervention. In one quarter, students in the writing

group improved their average critical thinking from the 45th to the 53rd percentile, whereas students in the nonwriting group declined from the 42nd to the 40th percentile.

The researchers also found, however, that the writing assignments most benefited students who had stronger critical-thinking skills in the first place. In other words, the analytical writing exercises seemed to have the same sort of Matthew effect that researchers have observed in reading—students who start with better skills increase their abilities at a faster rate than students who start with weaker skills (Stanovich, 1986).

### Flipping the Paradigm

This research suggests that some kinds of writing may help students *develop* their critical-thinking skills, but writing does not necessarily *teach* critical thinking. In fact, the best way



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to help students learn critical thinking may be to actually teach it.

What may be more useful is to explicitly introduce students to the language of logic and reason, providing them with an approach to analyze their own and others' thinking. As University of Melbourne professor Tim van Gelder (2005) observes, "Instead of saying, 'That argument sucks,' the critical thinker can say that she does not accept the conclusion, even though she grants the premises, because the inference is an example of the fallacy of post hoc ergo propter hoc" (p. 44).

In my own first semester of college, I enrolled in a logic course that turned out to be a fortuitous complement to freshman composition. In hindsight, had I a few years later provided my own students with the same benefits of direct instruction in syllogisms, logical fallacies, and Venn diagrams, they

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might have found it easier to demonstrate critical thinking in their writing. Tragically, the "Thinking and Writing" course was widely known across campus as a weed-out class because many students struggled to construct and support sound arguments. The real culprit, though, may have been that too few of us instructors understood that although writing and thinking may be linked, students don't learn to think just by learning to write; rather, to learn to write, they need to learn to think. ■

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