…The Essence of Critical Thinking Is Testing Claims With Evidence' (Opinion)

By Larry Ferlazzo — March 23, 2021

11-14 minutes

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***(This is the final post in a three-part series. You can see Part One** here*

***and Part Two** here*

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The new question-of-the-week is:

What is critical thinking and how can we integrate it into the classroom?

Part One ‘s guests were Dara Laws Savage, Patrick Brown, Meg Riordan, Ph.D., and Dr. PJ Caposey. Dara, Patrick, and Meg were also guests on my 10-minute

BAM! Radio Show . You can also find a list of, and links

to, previous shows here.

In Part Two , Dr. Kulvarn Atwal, Elena Quagliarello, Dr. Donna Wilson, and Diane Dahl shared their recommendations.

Today, Douglas Reeves, Anthony Nesbit, and Kristen Koppers "wrap up" this series.

'Disagree Without Becoming Disagreeable'

Douglas Reeves is the author of more than 30 books and 100 articles on educational leadership, teaching, and student achievement. His videos and articles are all free downloads at CreativeLeadership.net

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reached at DReeves@ChangeLeaders.com :

Students and their teachers need critical thinking now more than ever. This is true not only because of the

analytical challenges that critical thinking provides but also because of the social function that is served by civil discourse—that is, we must disagree without becoming disagreeable.

The essence of critical thinking is testing claims with evidence. Even very young children can, as Stanford neurologist Allison Gopnik reminds us, test hypotheses and tell truth from falsehood. Unfortunately, as children grow older, they confuse critical thinking with personal criticism and find the social cost of challenging assertions to be overwhelming. Adolescents in particular value consensus, and in some schools, the student who seeks the apparently reasonable middle ground may be prized over the one who vigorously defends a point of view with evidence.

If we want to send students into the world prepared to challenge advertising claims, whether from food companies or politicians, they need to practice critical thinking in the classroom in a setting where claims can be challenged without it being regarded as a personal insult. The same is true in faculty meetings and professional learning settings, where too often breathless assertion, accompanied by strong emotional appeals, is prized over evidence.

I like to assign teachers and administrators roles to play as they review claims from educational research, with half the participants arguing why the claim is wrong and the other half supporting the claim. If we are not willing to model this in faculty meetings, we are unlikely to see critical thinking in the classroom.

‘Design Thinking’

Anthony Nesbit began his teaching career in Seville, Spain, teaching English. He has taught Spanish and English to speakers of other languages for more than 20 years. He holds a B.A. in Spanish and an M.A. in TESOL. Currently, he teaches English-learners in grades K-12:

Critical thinking involves the kinds of abilities associated with the higher-order skills that Bloom identifies on his taxonomy. Those skills that have to do with reasoning, analyzing, combining thoughts, and creating information.

It is important that we as teachers integrate critical thinking as much as possible into our classrooms. The best and most effective way to do this is by asking questions. By posing questions to students, we get students to think. Posing open-ended questions that require a supported response about any subject is an invitation to think critically.

Teachers can do this with any subject matter. However, I think the engineering practices and the engineering-design process used in STEM particularly support critical thinking.

First, the questions of the engineering-design process are ones that ask students to solve a problem or improve on something that may not work very well. The next step in the engineering-design process asks students to imagine and plan. Here come more questions: Will this work? What does this look like? In this part of the design process, the thinking is more abstract but definitely critical. Students are making connections to the

wider world. Then, there is the part of the engineering-design process that asks students to create. This is critical thinking at its best. The final step in the engineering-design process is evaluation. Yet, more critical thinking.

I think if teachers could integrate “design thinking” and “computational thinking” into every aspect of the classroom, students would be more innovative problem solvers and critical thinkers. This can be done if teachers incorporate more problem-based tasks into the classroom and include more maker space activities and opportunities to *create*.

Thinking ‘Outside the Box’

Kristen Koppers is a national-board-certified teacher. Her education book Differentiated Instruction in the Teaching Profession *was released in July 2019 and her children’s book* The Perfect Puppy *was released in May 2020:*

One of the most important parts of learning how to critically think is to analyze situations and come up with any logical solutions.

Integrating critical thinking in education is not a difficult task. However, getting the students to “think outside the box” is a skill with teaching. By offering students open-ended questions where there are no “yes” or “no” or “right” or “wrong” answers, it will encourage them to think differently from their classmates. This can be accomplished at any level. For instance: While we know that 2+2=4, a teacher could ask elementary students in what other ways can a number plus another number = 4. (3+1, 1+3; 4+0). The point is that even in math, there is more than one way to add numbers to find the same sum. Teachers can go a bit further and ask for 3-digit numbers that equal 4. Even at any grade level in education, an English teacher can ask students, “Why did an author use a bird as a main character instead of a human being?”

Additionally, teachers creating essential questions for each chapter or unit will engage students more effectively than asking closed-ended ones. From elementary school through postsecondary education, students need to be challenged at every level. The essential questions can begin a unit, be discussed, and then reviewed again in the middle and end of the unit. This would be a great opportunity to see if students change their thought process. It’s important to give students as many opportunities to use critical-thinking skills in the classroom so they can be applied outside the classroom.

The inability to think, or critically think, becomes a problem when not related to schoolwork. Think about this: A student graduates from high school, goes on to college, goes to medical school, completes his or her residency, and becomes a brain surgeon. During surgery, everything the student learned academically is not working. What does the doctor do? In the midst of surgery, he or she cannot just give up or research online. During his or her education, the opportunity to find alternate solutions that are not in a book could’ve been relevant at this point.

So what is it that we need to do to prevent a medical student from learning A, B, C, D options to provide the best medical care for the patients? At the elementary level, it's time for students to be given every possible chance to think outside the box when necessary.

As a secondary education English teacher, when my students walked into my room every day, they knew it would not be a ordinary day. They knew I would challenge them to think critically but most of all understand ideas from different perspectives.

Thanks to Douglas, Anthony, and Kristen for their contributions!

Please feel free to leave a comment with your reactions to the topic or directly to anything that has been said in this post.

Consider contributing a question to be answered in a future post. You can send one to me at lferlazzo@epe.org

. When you send it in, let me know if I can use your real name if it's selected or if you'd prefer remaining anonymous and have a pseudonym in mind.

You can also contact me on Twitter at @Larryferlazzo .

Education Week has published a collection of posts from this blog, along with new material, in an e-book form. It's titled Classroom Management Q&As: Expert Strategies for Teaching

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Just a reminder; you can subscribe and receive updates from this blog via email

(The RSS feed for this blog, and for all Ed Week articles, has been changed by the new redesign—new ones won't be available until February). And if you missed any of the highlights from the first nine years of this blog, you can see a categorized list below.

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***I am also creating a** Twitter list including all contributors to this column*

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