Critical Thinking: How to Teach It?

by Tom Lickona, Director, Center for the 4th and 5th Rs


To answer that question, we need to define “smart.”

Nearly all educators would agree that being smart includes being able to ask good questions. Do schools teach that? How many instances can you recall, from all your years of schooling, of being taught how to ask good questions?

A personal story: When our older son Mark was in 5th grade, he came home from school one afternoon and said, “We learned today that the Chinese discovered America.”

“No kidding,” I said with sincere interest. “When I was your age, we learned that Columbus discovered America. Later, schools taught that Leif Erikson and the Vikings discovered America. How did they decide that the Chinese discovered America?”

“That’s what the textbook says,” Mark replied.

“Okay, but how do the textbook’s authors know the Chinese discovered America?”

“Scientists discovered Chinese artifacts in Georgia,” Mark said.

“Hmmm . . . how do they know they were Chinese artifacts,” I asked, “and how do they know how old they were?”

“Gee, Dad,” Mark said, with obvious frustration, “I can’t answer all these questions!”

“I’m just trying to get you to think,” I said. “Don’t you ever ask your teachers questions like this?”

Mark replied: “If I asked my teachers questions like this, I’d drive them nuts! They just want you to learn stuff—they don’t want you to develop your mind!”

“Don’t you ever ask your teachers questions like this?” I said.

“Obviously, no teacher would want students to think, ‘We don’t want you to develop your mind.’ Mark’s teachers undoubtedly would have been shocked to know he had concluded that. Virtually all teachers would say that they want to teach students to learn to think—and to think critically.

What One Teacher Does

Our two sons are now fathers, one with 8 kids and the other with 6. I picked up our oldest grandson Fin after school recently when he was a high school senior. His last class of the day was American Government, which he said was his favorite course. I asked him why.

“‘The teacher’s very smart, and he has a great sense of humor,’” he said. “I asked, ‘How does he bring the subject matter to life?’ Fin said:

“Well, at the beginning of the course he said that his goal was to teach us to think. He said he wanted us to know his bias; he’s a libertarian and that would probably come through in various ways. He makes you feel very free to express your own opinion. The part of the class I like best is when he teaches us about logical fallacies—how to spot them in arguments.

So here is a teacher who intentionally fosters critical thinking in three ways:

- He tells his students that his goal is to teach them to think.
- He alerts them to his bias and creates an atmosphere of intellectual freedom.
- He teaches them a skill of logical thinking—identifying fallacious reasoning.

A Critical Thinker . . .

1. Seeks truth.
2. Asks questions and looks for evidence (“How do we know?”).
3. Reason logically.
4. Considers conflicting views; evaluates arguments and bias.
5. Sees connections.
7. Can think about own thinking.
8. Has intellectual humility; is open to being challenged and willing to admit mistakes.
9. Has intellectual courage; is able to take and defend a position regardless of its popularity.
A question all of us who teach might ask ourselves: “What are at least three things I do to teach my students to think critically?”

**Critical Thinking: Rhetoric or Reality?**

To what extent is our professed commitment to critical thinking an “espoused value” rather than an “operative value” that actually shapes what happens in classrooms and impacts students’ thinking? What would we find, for example, if we asked college and high school students:

*Rate on a 5-point scale, where 1 is strongly disagree and 5 is strongly agree, your disagreement or agreement with:*

- My instructor teaches students to think critically by having them evaluate conflicting perspectives on a particular topic or issue, including views contrary to the instructor’s.
- I have grown in my ability to think critically as a result of this course.

A relevant study: New York University sociologist Richard Arum, in his 2011 book *Academically Adrift: Limited Learning on College Campuses,* reported his four-year study that tracked the development of 2,322 college students from a broad range of 24 U.S. colleges and universities.

Forty-five percent of students made no significant improvement in their critical thinking, reasoning, or writing skills during the first two years of college. After four years, 36 percent showed no gains. Many students graduated without knowing how to differentiate fact from opinion, make a clear written argument, or assess conflicting reports of a situation or event. Says one college graduate, commenting on the study:

*Ideology plays a big part in this. Any time you have a culture that is completely dominated by one ideology, that ideology will ignore or suppress challenges to its dominance. Critical thinking is a challenge to ideology in general.*

Another lesson from this study: If we aim to teach critical thinking, we should assess to what extent we’re achieving that outcome.

**What Award-Winning High Schools Do**

What do the best high U.S. schools do to develop critical thinking?

In 2005, our Center for the 4th and 5th Rs published *Smart & Good High Schools: Integrating Excellence & Ethics for Success in School, Work, and Beyond.* It reported our 2-year study, carried out by Matthew Davidson ([www.excellenceandethics.com](http://www.excellenceandethics.com)) and myself, of 24 award-winning high schools—big and small, urban and rural, public and private, secular and religious, in every region of the country—and what they do to foster their students’ character development.

This high school research led us to propose a new conceptual framework for character education. We defined character as having two sides: moral character (virtues such as honesty, kindness, and respect that enable us to be our best in relationships) and performance character (virtues such as creativity, hard work, and perseverance that enable us to do our best in any area of endeavor).

We then defined those two sides of character in terms of 8 essential developmental outcomes needed for a flourishing life: (1) critical thinker; (2) diligent and capable performer; (3) socially and emotionally skilled person; (4) ethical thinker; (5) respectful and responsible moral agent; (6) self-disciplined person leading a healthy lifestyle; (7) democratic citizen; and (8) spiritual person engaged in crafting a life of noble purpose. (Download the full report at [www.cortland.edu/character](http://www.cortland.edu/character).) In this article, we focus on classroom practices we observed in our study that are designed to develop the first outcome: students’ ability to think critically.

**Paideia: A Curriculum for Critical Thinking**

In Oakland (CA) Technical High School, a large, urban, multi-ethnic public school, we observed a curriculum designed to teach critical thinking: the Paideia program. Based on a model developed by University of Chicago philosopher-educator Mortimer Adler, Paideia develops thinking and communication skills through Socratic methodology, the integration of English and history, and demanding reading and writing requirements.

At Oakland Tech, Paideia’s 360 students are evenly divided between Caucasian students and students of color from diverse backgrounds. The version of Paideia developed by this school looks like this:

**10th grade:** World Lit. & World History

**11th grade:** American Lit. & American History

**12th grade:** English IV; Political Theory; American Government; Economics.

As one example of course content, the 11th-grade American History syllabus covers the following themes:

- the philosophical and religious underpinnings of the nation
- the development of our political system
- the cultural heritage/changes America has experienced
- the territorial growth of the nation
- the exploitation of America’s minorities, women, and the poor
- the role of the U.S. in world affairs
- issues confronting America today

Maryann Wolfe, the Paideia teacher we interviewed, showed us the reading lists for this course and other Paideia courses—readings that would be daunting for many college students. She explained how the American Government course develops critical thinking:

In senior American Government, we recently did a unit on the impact of money on politics. We began by having students read a variety of pieces that laid out the basic arguments. One author argued for doing away with political action committees (PACS)—seeming to show that *this* money got *that* result. Another argued that people should be able to spend their money as they choose; it’s a form of free speech. When we discuss the readings as a class, we always move through a series of questions for each article:

- *What is the author’s main thesis?*
- *What evidence does the author provide to support his or her thesis?*
- *What bias, if any, do you see?*

We keep a running list of all the arguments and evidence on each side of the issue. I really emphasize evidence. When students speak in discussion, I always ask, “What is your evidence? This argument isn’t going anywhere without evidence.” We always devote time to solutions. First, I’ll ask them, “How do you think this problem could be solved?” Then, for homework, they read articles that offer different ways of alleviating the problem. We come back and discuss those:
During the first class period, Third period: The pro-

excellence diverse perspectives—or not treat it at all.

public schools must take great care to treat parents, and other community members, on such issues held by students, school staff, community. Out of respect for the diverse views on such issues held by students, school staff, parents, and other community members, public schools must take great care to treat a controversial issue in a way that’s fair to diverse perspectives—or not treat it at all.

For example: Prior to the U.S. invasion of Iraq in the first Gulf War, students at one high school asked permission to perform “Lysistrata,” Aristophanes’s anti-war play in which women vow to abstain from sex until men abstain from war.

The principal agreed to allow the play—on the condition that it be followed by a panel discussion including persons who supported military action in Iraq. After the panel, students said they had learned the importance of hearing different viewpoints.

Schools must treat controversial issues in a way that is fair to diverse perspectives.

Joyce Briscoe, a world history teacher, said it’s not enough for teachers to “just let kids air their feelings.” Regarding Middle East conflicts, she has given students crash lessons on the long-standing hostilities in that region and why they exist. Students and parents say they welcome her approach.

Structured Controversy

A research-based approach to controversial issues—one that prevents teacher bias from skewing the discussion, maximizes student participation, and reaps the benefits of cooperative learning—is “structured controversy.”

Developed by cooperative learning experts David and Roger Johnson, this model defines controversies as “interesting problems to be solved rather than win-lose situations.” The Johnsons reject the classic debate format in favor of a format in which students work together. To help students develop the cooperative attitudes and skills needed for structured controversy, students are asked to commit to these rules of discussion:

1. I am critical of ideas, not people.
2. I focus on making the best decision possible, not on “winning.”
3. I encourage everyone to participate.
4. I listen to everyone’s ideas, even if I do not agree, and restate (paraphrase) what someone said if it is not clear.
5. I try to understand both sides.
6. I change my mind when the evidence clearly indicates that I should do so.

Hydrofracking, the controversial natural gas drilling method, can be used to illustrate structured controversy:

1. Assignment. The teacher puts students into groups of 4, comprised of 2-person “advocacy teams.” Within each foursome, one team of two is assigned the position that “hydrofracking is environmentally safe and should be permitted” and the other team, the position that “hydrofracking is environmentally risky and should be prohibited.”

2. Planning. During the first class period, the 2-person teams receive materials from the teacher that support their assigned positions. Their task: “Plan how to present your position so that you and the opposing team in your group will learn your position so well as to find it convincing.”

3. Advocacy. During the second period, the two teams advocate their positions, rebut the other side, and listen carefully throughout this process to their opponents’ arguments so they learn them and will be able to use them during Step 4 (position switch).

4. Position switch. Third period: The pro-fracking pairs join a new foursome and now argue the anti-fracking position. The previouly anti-fracking pairs stay in place and now argue for fracking.

5. Reaching consensus. During the fourth period, the four group members synthesize what they see as the best information and reasoning from both sides into a consensus solution. They then write a group report.

6. Individual accountability. After the consensus report, each student takes a test on the readings.

What the Research Shows

- Students who participate in structured controversy:
  - Gain in perspective-taking
  - Produce higher-quality solutions
  - Grow in academic self-esteem
  - Demonstrate greater mastery and retention of the subject matter than is true with debate or individual learning.

—David and Roger Johnson, Critical Thinking Through Structured Controversy
A caution: The Johnsons’ structured controversy format may not be appropriate for some issues—such as abortion, euthanasia, and sexual behavior—where students’ conscience convictions are so strong that it would be uncomfortable for them to argue the opposite of what they truly believe.

In guiding discussion of a controversial issue, should teachers let their own views be known? In order to maximize an atmosphere of intellectual freedom that promotes critical thinking, a teacher can say:

The goal is not for you to learn what I think, but for you to understand and evaluate carefully all the arguments and evidence, and come to what you think is the most supportable position.

Should Schools Discuss Abortion?

Abortion is one of our most controversial social issues. Those who favor abortion rights believe that a woman’s right to choose whether to end a pregnancy is a deeply personal decision and is vital to the full participation of women in the economic and political walks of American life. Those who oppose abortion argue that it is infanticide in the womb, a violent solution to a problem for which life-affirming alternatives exist, and a violation of the most fundamental human right—the right to live.

The ethicist John Noonan observes that not since the Civil War over slavery has the nation been so divided over questions as basic as “Who is a human being?” and “Who shall be accorded human rights?” When some Maryland schools approved “respect for life” as one of 18 ethical values to be taught, teachers weren’t sure how to handle questions about abortion, which they expected to come up. Given the centrality of the abortion issue in American moral and political life, a school may decide it can’t be avoided. The question then becomes, how to do justice to this complex and emotionally charged issue?

Making the Classroom Safe for Diversity

A teacher can create a classroom that encourages students to speak their minds honestly, by saying:

I want everyone to be able to think and speak without fear of intimidation. Remember, it takes courage to take a minority position, and history often applauds those who did. Also, there is no shame in changing your mind or in withholding judgment if you’re not sure.

Next, the teacher can have students research various opinion polls on abortion—letting students see for themselves the complexity of public sentiment on this issue, as well as areas of agreement that exist. To take just one recent survey: A January 2015 poll by The Marist Institute for Public Opinion, based on a random national sample of American adults 18 or older, reported these findings:

- When asked to self-identify as “pro-choice” or “pro-life,” Americans divide almost equally: 49% describe themselves as pro-choice, 47% as pro-life.
- 84% of Americans believe that abortion should be limited to first three months of pregnancy or allowed only in cases of rape, incest, or to save the life of the mother. (Editor’s note: The 1973 Supreme Court ruled in Roe v. Wade that abortion is permissible during the second and third trimesters when “necessary to preserve the woman’s life or health.” In Doe v. Bolton, the Court defined “health” as including “all factors—physical, emotional, psychological, familial, and the woman’s age.”)
- 84% think laws can exist which “protect both the health and well-being of a woman and the rights of the unborn.”

Students can also be given data that help to break down stereotypes regarding who holds what views of abortion. A New York Times/CBS poll, for example, found that more women (51%) favored “greater restrictions” on abortion than did men (49%) and that a third of people who self-identified as “politically liberal” wanted to limit abortions to rape, incest, and threats to the mother’s life.

Feminist groups such as the National Abortion Rights Action League (www.prochoiceamerica.org/) champion abortion rights as essential for women’s welfare and equality, but groups such as Feminists for Life (www.feministsforlife.org) argue that women are harmed by abortion and that the first American Feminists, such as Susan B. Anthony and Elizabeth Cady Stanton, opposed abortion as oppression of the weak by the strong.

As with other controversial topics, schools tackling abortion will face the formidable challenge of trying to ensure that students gain enough knowledge about the issue to be able to make an informed judgment. Among the questions meriting investigation:

- What did the 1973 Supreme Court rulings (Roe v. Wade and Doe v. Bolton) say regarding the legality of abortion during each trimester of pregnancy? What was the Court’s reasoning?
- How many abortions have been performed in the U.S. each year since the 1973 Supreme Court decisions?
- What abortion restrictions have Congress and state legislatures passed? How has the Supreme Court ruled on each?
- How do state laws on abortion vary?
- What have different opinion polls found regarding Americans’ views of the rightness or wrongness of abortion? Regarding when during pregnancy and for what reasons the law should permit abortion?
- What are the facts of prenatal development? At what point can the fetus/baby feel pain?
- How are the different abortion procedures performed? What is done to the woman? To the fetus/baby?
- What does the law require if an abortion results in a live birth? How often does that happen?
- What are the different reasons why women have abortions?
- How do abortion rates vary as a function of age, socioeconomic level, education level, religion, and race or ethnic group?
- What alternatives to abortion are available to women facing unplanned pregnancies?
- What social supports do pro-choice and pro-life groups agree are needed for women facing unexpected pregnancies?
- Apart from the question of whether abortion should be allowed by law, what arguments have been made concerning whether abortion itself is right or wrong?

The theory of free speech, that truth is so much larger and many-sided than we know, that it is much better at all costs to hear everyone’s account of it, remains one of the great discoveries of the modern time.

—G.K. Chesterton

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