

7 WAYS TO THINK MORE CRITICALLY

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<https://collegeinfo geek.com/improve-critical-thinking-skills/>

1. Ask Basic Questions

*“The world is complicated. But does every problem require a complicated solution?”
– Stephen J. Dubner*

Sometimes an explanation becomes so complex that the original question gets lost. To avoid this, continually go back to the basic questions you asked when you set out to solve the problem.

Here are a few key basic question you can ask when approaching any problem:

- What do you already know?
- How do you know that?
- What are you trying to prove, disprove, demonstrated, critique, etc.?
- What are you overlooking?

Some of the most breath-taking solutions to problems are astounding not because of their complexity, but because of their elegant simplicity. Seek the simple solution first.

2. Question Basic Assumptions

“When you assume, you make an ass out of you and me.”

The above saying holds true when you’re thinking through a problem. It’s quite easy to make an ass of yourself simply by failing to question your basic assumptions.

Some of the greatest innovators in human history were those who simply looked up for a moment and **wondered if one of everyone’s general assumptions was wrong**. From Newton to Einstein to Yitang Zhang, questioning assumptions is where innovation happens.

You don’t even have to be an aspiring Einstein to benefit from questioning your assumptions. That trip you’ve wanted to take? That hobby you’ve wanted to try? That internship you’ve wanted to get? That attractive person in your World Civilizations class you’ve wanted to talk to?

All these things can be a reality if you just **question your assumptions and critically evaluate your beliefs about what’s prudent, appropriate, or possible**.

If you’re looking for some help with this process, then check out Oblique Strategies. It’s a tool that musician Brian Eno and artist Peter Schmidt created to aid creative problem solving. Some of the “cards” are specific to music, but most work for any time you’re stuck on a problem.

3. Be Aware of Your Mental Processes

Human thought is amazing, but the speed and automation with which it happens can be a disadvantage when we're trying to think critically. Our brains naturally use heuristics (mental shortcuts) to explain what's happening around us.

This was beneficial to humans when we were hunting large game and fighting off wild animals, but it can be disastrous when we're trying to decide who to vote for.

A critical thinker is aware of their cognitive biases and personal prejudices and how they influence seemingly "objective" decisions and solutions.

All of us have biases in our thinking. Becoming aware of them is what makes critical thinking possible.

4. Try Reversing Things

A great way to get "unstuck" on a hard problem is to try reversing things. It may seem obvious that X causes Y, but what if Y caused X?

The "chicken and egg problem" a classic example of this. At first, it seems obvious that the chicken had to come first. The chicken lays the egg, after all. But then you quickly realize that the chicken had to come from somewhere, and since chickens come from eggs, the egg must have come first. Or did it?

Even if it turns out that the reverse *isn't* true, considering it can set you on the path to finding a solution.

5. Evaluate the Existing Evidence

"If I have seen further it is by standing on ye sholders of Giants." – Isaac Newton

When you're trying to solve a problem, it's always helpful to look at other work that has been done in the same area. There's no reason to start solving a problem from scratch when someone has already laid the groundwork.

It's important, however, to evaluate this information critically, or else you can easily reach the wrong conclusion. Ask the following questions of any evidence you encounter:

- Who gathered this evidence?
- How did they gather it?
- Why?

Take, for example, a study showing the health benefits of a sugary cereal. On paper, the study sounds pretty convincing. That is, until you learn that a sugary cereal company funded it.

You can't automatically assume that this invalidates the study's results, but you should certainly **question them** when a conflict of interests is so apparent.

6. Remember to Think for Yourself

Don't get so bogged down in research and reading that you forget to **think for yourself**—sometimes this can be your most powerful tool.

Writing about Einstein's paper "On the Electrodynamics of Moving Bodies" (the paper that contained the famous equation $E=mc^2$), C.P. Snow observed that "it was as if Einstein 'had reached the conclusions by pure thought, unaided, without listening to the opinions of others. To a surprisingly large extent, that is precisely what he had done'.

Don't be overconfident, but recognize that thinking for yourself is essential to answering tough questions. I find this to be true when writing essays—it's so easy to get lost in other people's work that I forget to have my own thoughts. Don't make this mistake.

7. Understand That No One Thinks Critically 100% of the Time

"Critical thinking of any kind is never universal in any individual; everyone is subject to episodes of undisciplined or irrational thought."— Michael Scriven and Richard Paul

You can't think critically all the time, and that's okay. Critical thinking is a **tool** that you should deploy when you need to make important decisions or solve difficult problems, but you don't need to think critically about everything.

And even in important matters, you will experience lapses in your reasoning. What matters is that you **recognize these lapses and try to avoid them in the future.**

Even Isaac Newton, genius that he was, believed that alchemy was a legitimate pursuit.