

Universities that offer specialized training in specific professions have an answer: "We're training the next generation of nurses, accountants, physical therapists, teachers, software engineers, etc., etc." Whether they do it well or not is a legitimate issue, but that they *should* be doing it is not much in dispute. For programs in the liberal arts, however, the answers are not straightforward. You often hear defenders of liberal-arts education suggest that their goal is less to teach the specifics of a particular discipline or profession than to teach students how to think. It is hard to quarrel with this goal, and it is echoed by those who frequently intone about how fast the technological world is changing and how important it is to have a flexible and innovative work force. Just as the academy wants to teach students how to think, employers want to hire students who know how to think.

But what does it mean to "know how to think"? Is there one right way to think? If so, what is it? Every educator wants students to learn how to think. But nobody really knows what that means. We have to do better. We have to specify in greater detail what "learning how to think" requires and then ask ourselves if colleges and universities are meeting this goal.

Knowing how to think demands a set of cognitive skills — quantitative ability, conceptual flexibility, analytical acumen, expressive clarity. But beyond those skills, learning how to think requires the development of a set of intellectual virtues that make good students, good professionals, and good citizens. I use the word "virtues," as opposed to "skills," deliberately. As Aristotle knew, all of the traits I will discuss have a fundamental moral dimension. I won't provide an exhaustive list of intellectual virtues, but I will provide a list, just to get the conversation started.

Love of truth. Students need to love the truth to be good students. Without this intellectual virtue, they will get things right only because we punish them for getting things wrong. When a significant minority of Americans reject evolution and global warming out of hand, the desire to find the truth can't be taken for granted.

It has become intellectually fashionable to attack the very notion of truth. You have your truth, and I have mine. You have one truth today, but you may have a different one tomorrow. Everything is relative, a matter of perspective. People who claim to know the "truth," it is argued, are in reality just using their positions of power and privilege to shove their truth down other people's throats.

This turn to relativism is in part a reflection of something good and important that has happened to intellectual inquiry. People have caught on to the fact that much of what the intellectual elite thought was the truth *was* distorted by limitations of perspective. Slowly the voices of the excluded have been welcomed into the conversation. And their perspectives have enriched our understanding. But the reason they have enriched our understanding is that they have given the rest of us an important piece of the truth that was previously invisible to us. Not *their* truth, but *the* truth. It is troubling to see how quickly an appreciation that each of us can attain only a partial grasp of the truth degrades into a view that there really isn't any truth out there to be grasped.

Finding the truth is hard. Relativism makes intellectual life easier. There is no need to struggle through disagreements to get to the bottom of things if there is no bottom of things. Everyone is entitled to an opinion — the great democratization of knowledge.

Love of truth is an intellectual virtue because its absence has serious moral consequences. Relativism chips away at our fundamental respect for one another as human beings. When people have respect for the truth, they seek it out and speak it in dialogue. Once truth becomes suspect, debates become little more than efforts at manipulation. Instead of trying to enlighten or persuade people by giving them reasons to see things as we do, we can use any form of influence we think will work. This is what political "spin" is all about.

Honesty. Honesty enables students to face the limits of what they themselves know; it encourages them to own up to their mistakes. And it allows them to acknowledge uncongenial truths about the world. Most colleges encourage a kind of honesty: Don't plagiarize, don't cheat. But it is uncommon to see students encouraged to "face up to your ignorance and error," or "accept this unpleasant truth and see how you can mitigate its effects instead of denying it."

Fair-mindedness. Students need to be fair-minded in evaluating the arguments of others. There is a substantial literature in psychology on what is called "motivated reasoning," our almost uncanny ability to emphasize evidence that is consistent with what we already believe, or want to believe, and to ignore evidence that is inconsistent. This may be especially true in the moral domain. As the psychologist Jonathan Haidt pointed out in his

book *The Righteous Mind* (Pantheon, 2012), people use reason more like a lawyer who is making a case than like a judge who is deciding one.

Humility. Humility allows students to face up to their own limitations and mistakes and to seek help from others. As Carol Tavris and Elliot Aronson wrote in their book, *Mistakes Were Made, but Not by Me* (Harcourt, 2007), we often hear people use passive constructions when describing failures. Students say things like "I got an A," but "she gave me a C."

Perseverance. Students need perseverance, since little that is worth knowing or doing comes easily. At the moment, we're cultivating the opposite. Worried that our students suffer from collective ADD and will give us bad course ratings if we make them struggle, we are dumbing down our courses to cater to short attention spans. We assign a TED talk instead of a journal article; a popular (and short) book instead of a scholarly one. We don't appreciate that perseverance (or the related attribute, "grit") is more like a muscle that needs to be developed than a natural resource that needs to be excavated.

Courage. Students need intellectual courage to stand up for what they believe is true, sometimes in the face of disagreement from others, including people in authority, like their professors. And they need courage to take risks, to pursue intellectual paths that might not pan out.

Good listening. Students can't learn from others, or from their professors, without listening. It takes courage to be a good listener, because good listeners know that their own views of the world, along with their plans for how to live in it, may be at stake whenever they have a serious conversation.

Perspective-taking and empathy. It may seem odd to list perspective-taking and empathy as intellectual virtues, but it takes a great deal of intellectual sophistication to get perspective-taking right. Young children "feel" for a peer who is upset but are clueless about how to comfort her. They try to make a crying child feel better by doing what would make them feel better. And teachers, at all levels, must overcome "the curse of knowledge." If they can't remind themselves of what they were like before they understood something well, they will be at a loss to explain it to their students. Everything is obvious once you know it.

Perspective-taking and empathy pay enormous dividends in professional life. In his wonderful book, *Critical Decisions* (Harper Collins, 2012), Peter Ubel, a professor and physician at Duke University, makes a compelling case that while the physician paternalism of the old days is happily gone, it has been replaced by an equally inadequate model of "patient autonomy" in which doctors present the data and patients make the decisions. Though it is true that doctors can't tell prostate-cancer patients whether or not to have surgery, it is also true that patients can't figure it out on their own.

Good decisions require both medical expertise and an understanding of the patient's unique life circumstances. They require shared decision-making. But for that sort of doctor-patient conversation, doctors have to be good listeners who are able to take the perspective of their patients. Moreover, medicine in the developed world has increasingly become a matter of managing chronic disease rather than curing acute disease. But the management of chronic disease (diabetes, hypertension, cardiac insufficiency, musculoskeletal pain) often makes difficult demands on patients to change how they live. A list of lifestyle changes is of little use. Most people know what to do. The problem is how to motivate them to do it. It takes empathetic, perspective-taking medical providers to get patients to work as partners in managing their diseases.

Similarly in law, knowledge of the law may be the key to effective advocacy, but by itself, it will not tell lawyers what they have to know about clients who need to be counseled. A good lawyer needs to know the client as well as the law.

And in education, good teachers eschew one-size-fits-all lesson plans and opt, instead, to reach each student where she is. But if the teacher can't gain insight into the thoughts and aspirations of each student, the one-size-fits-all lesson plan is the best he can do.

Wisdom. Finally, students need what Aristotle called practical wisdom. Any of the intellectual virtues I've mentioned can be carried to an extreme. Wisdom is what enables us to find the balance (Aristotle called it the "mean") between timidity and recklessness, carelessness and obsessiveness, flightiness and stubbornness, speaking up and listening up, trust and skepticism, empathy and detachment. Wisdom is also what enables us to make difficult decisions when intellectual virtues conflict. Being empathetic, fair, and open-minded often rubs up against fidelity to the truth. Practical wisdom is the master virtue.

My argument for wisdom as the manager of the other intellectual virtues has a parallel in the writings of Thomas Kuhn, whose *The Structure of Scientific Revolutions* (1962) changed the way people think about science. Indeed, it changed the way some people think about almost everything. Kuhn's point was that scientific progress could not be understood as a logical, rule-governed advance in understanding that accumulates brick by brick, fact by fact. There have been periods in which science seemed to move in one direction, but also periods of upheaval, when everything changed. Few such "revolutionary" periods were produced by a key new fact. So the lesson that many nonscientists drew from Kuhn was that truth is arbitrary, and that scientific change is as much about intellectual fashion as about progress. Kuhn was appalled by this conclusion and tried to make clear that just because scientific advance was not governed by rules did not mean that it was arbitrary. Scientists, he argued, adhere to what he called "epistemic values" — simplicity, accuracy, comprehensiveness, fruitfulness — that make some theories better than others. Values are not rules, so scientists can disagree about how important each value is and how well a given explanation exemplifies each value. But scientists do tend to converge on allegiances to certain theories for good, non-arbitrary reasons. This convergence reflects the collective wisdom of science. My list of intellectual virtues plays the same role in understanding good thinking that epistemic values play in understanding good science.

In my view, the way to defend the value of college is to defend the importance of intellectual virtues and then show that the education that colleges provide is successful at cultivating those virtues. Cultivation of intellectual virtues is not in conflict with training in specific occupations. On the contrary, intellectual virtues will help to create a work force that is flexible, able to admit to and learn from mistakes, and open to change. People with intellectual virtues will be persistent, ask for help when they need it, provide help when others need it, and not settle for expedient but inaccurate solutions to tough problems. In the Stanford business professor Jeffrey Pfeffer's important book *The Human Equation* (Harvard Business School Press, 1998), he argues that the right way to hire is to focus on the skills you don't know how to train, and trust that you can teach the skills you do know how to train. Workplaces need people who have intellectual virtues, but workplaces are not in a good position to instill them. Colleges and universities should be doing this training for them.

Students with training in the liberal arts will be not only better people and better citizens but also better professionals and employees.

Are they? Few colleges and universities think systematically about how to encourage intellectual virtues. Mostly their cultivation is left to chance, not to institutional design. Aristotle argued that virtues are developed through practice, and by watching those who have mastered the relevant virtues. Professors have to model intellectual virtue in their everyday behavior. The questions we ask in class teach students how to ask questions. How we pursue dialogue models reflectiveness. Students watch who we call on, or don't, and learn about fairness. We teach them when and how to interrupt by when and how we interrupt. We teach them how to listen by how carefully we listen. If they see us admitting that we don't know something, we encourage intellectual honesty as well as humility. We are always modeling. And the students are always watching. We need to do it better. A good start is to do it deliberately and not by accident.

Most professors do not have the luxury of teaching small classes and seminars, as I do, and it is hard to model intellectual virtues when one is lecturing to 300 students. Nor do I envision a time when small classes will be commonplace at large institutions. Nonetheless, I think there are practices that can enhance the cultivation of virtue, even if they are imperfect substitutes for teacher-student dialogue.