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Four Alternative Futures for Education in the United States: It's Our Choice

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Abstract. This article discusses four possible futures toward which educational systems might direct our society. The first is a future dominated by rote memorizers. The second is a future of critical thinkers. The third is a future of successfully intelligent thinkers. The fourth is a future of wise thinkers. Each future builds on the previous one. Which one should our schools aspire to?

One way of conceiving of the task of describing the future of education in the United States is to view it as a prediction task. We have to guess what the future will hold. To a large extent, of course, any exercise such as this one must be a forecasting task. But the word *prediction* implies a certain passivity in the face of the future that I believe we should put aside. To a large extent, forecasting the future of education is a selection task. We, as a nation, get to choose our own future. What future will we choose? I describe here four (of many possible) futures. Each builds on the previous one and adds something to it. What future would you choose?

Future 1: The Ideal of the Walking Encyclopedia

Future 1 is the future that most children around the world face. The education they receive emphasizes rote memorization of whatever it is that the powers that be in the society think is worth rote memorizing. In a religious environment, it might be the Bible, the Koran, or some other holy book. In a secular environment, it might be a set of disconnected facts about the exports of various countries or the dates of certain treaties. Such training may be useful for those who build their lives expecting others to do what they have done; it will not be useful in developing the critical-thinking skills children will need to cope in a flexible way with a rapidly changing environment.

This future is one that many people support. I recently received an e-mail from an individual who plans to become "the smartest person in the world." His plan is receiving media attention. His method is to read the entire *Encyclopedia Britannica.* Lest this view sound limited to him, keep in mind that TV quiz shows, as well as national spelling and geography bees, measure how smart their contestants are in terms of their ability to retrieve large numbers of facts, many of which are of little relevance outside the context of the contest.

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There is no particular reason why sheer memorization should lead to the development of critical-thinking skills. Rote memorization requires recital and repetition. Critical thinking requires skillful analysis, evaluation, and interpretation. Of course, one cannot think without something to think about. Children or adults need a knowledge base with which to think. But there is a difference between a knowledge base and a store of information. Any repository of facts or supposed facts and ideas can be a store of information. One could memorize a German–English dictionary and know the translation of each of the words from German to English and vice versa. In this case, one would have a large store of information, but a trivial knowledge base. A knowledge base is for use. The information must be stored in an organized way that makes it easily retrievable when needed and at the call of different kinds of retrieval cues, whether on a test in school or on the larger test that is life. Too many teachers and students alike confuse the two. They believe that merely knowing an unrelated collection of poorly integrated facts will constitute a child's having developed a knowledge base. In fact, it will constitute a store of information, much of which may be unusable. One can end up with a situation similar to that of an erased computer disc. The data are not truly erased. They are still on the disc, unless one has taken special measures to ensure that the data are wiped clean. Rather, the data have simply become inaccessible. They no longer have a normal means of being called up. Only a computer specialist can retrieve them, often with difficulty, and usually in degraded form.

One would like to believe that a future as bleak as this one is not the future anyone has in mind for the children of the United States. But in our country, as well as in others, many children are being taught to do little more than recall and recognize. As a result, they become highly susceptible to the commission of cognitive fallacies. Why do we see on TV and elsewhere mindless crowds chanting the slogans that often-cynical leaders have taught them to mouth? Because the individuals have never been taught, or at least have never learned, how to think critically. When we see crowds in various locales, whether in the United States or elsewhere, act on their prejudices and their fears and fail to question the bases on which these feelings were instilled, we have the future that this world holds. It is the future envisioned in anti-Utopian novels such as *1984*. It may be more benign than the world envisioned by George Orwell, but it is the same kind of world.

Keith Stanovich (2002) has used the term *dysrationalia* to describe the kind of thinking that people display when they habitually fail to think critically. Ellen Langer (1997) has written extensively about mindlessness. One can use different words with somewhat different meanings, but the point is the same. People can be knowledgeable, they can be smart, but they may still think in ways that fail the test of good critical thinking.

How would you know whether people are exhibiting such a failure to think critically, no matter what you call it? You can use tests, such as the Cornell Tests of Critical Thinking (Ennis & Millman, 1985) or the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1952), but my guess is that such tests will never be widely used, nor is there any pressing need for them to be. The real test is in daily life, and countless people fail it. People who do not think critically may end up rallying to whatever cause their political leaders set for them. If they have well-intentioned, positive political leaders, they are fortunate indeed. Such leaders try to make a difference by constructing a positive agenda and then implementing it. Many leaders do not have positive agendas, however. Lacking ideas or the desire for a positive agenda, they construct a negative one. This agenda usually involves manufacturing a common enemy around whom their populaces may unite in their loathing and desire that the enemy meet a bad end. It is an old trick of political and other leaders to unite their people around their opposition to an outside threat (Sternberg, 2003). This is not to say that outside threats do not exist, but they need not exist for one to create such threats. People may find themselves blindly following cynical leaders. Daniel Gilbert (1991) has suggested an interesting distinction between what he refers

to as Cartesian and Spinozan forms of reality. The Cartesian view is that when we hear true information we accept it, and when we hear false information we reject it. Our minds are computational devices that, in one way or another, enable us to distinguish the true from the false, or at the very least, the credible from the incredible. The Spinozan view is that our minds are primed, more or less, to accept whatever we hear. To reject what we hear, we must initiate an extra step of thinking. We need actively to reject information that is untrue, rather than our minds simply automatically rejecting it. On this view, people may hear something that is untrue or incredible, and have the capacity to reject it, but fail to reject it because they do not take the additional step. Gilbert argues that there is a preponderance of evidence for the Spinozan view. Compounding the problem of people's failing actively to reject low-credibility information is people's demonstrated lack of skills in remembering source information. People are much more likely to remember what they heard than where they heard it. If people do not immediately take the extra step and tag the information as wrong or not credible, they later may fail to tag it so because they simply have forgotten where they heard it.

Is it possible that people's minds could operate at what would seem to be so basic, or even so base a level? The popularity of supermarket tabloids and numerous tabloid TV shows suggests that the answer is affirmative. Indeed, this popularity suggests that some people may even welcome such simplistic thinking because it feels comfortable and does not challenge them. A number of theorists, such as Seymour Epstein (1998), have suggested that people have two systems of thinking, a more cognitively logical and rational one, and a more associatively illogical and arational one. The evidence in favor of such dual processing is quite good. For many of the problems we face in everyday life, we fall back on the associative system. Many of us accept the foolishness of advertisements—on which advertisers spend a small fortune—because they appeal to our associative thinking, even if they do not appeal to our rational thinking.

When we are educated to rely solely on our memories rather than our critical thinking, we become more susceptible to committing a whole variety of everyday inductive fallacies, particularly fallacies of relevance. Fallacies of relevance are committed when the premises of an argument have no bearing on its conclusion, when the conclusion is irrelevant to the line of reasoning that led up to it. Arguments of this type are referred to by the Latin names *non sequiturs* (from a Latin phrase meaning "it does not follow") and *ignoratio elenchi* ("irrelevant conclusion"). There are many forms of fallacies of relevance, and here I cover only a few of them.

Ad Hominem Arguments

Inferences of the *ad hominem* type ("against the person" in Latin) attempt to discredit a claim by attacking its proponents instead of providing a reasoned examination of the claim itself. Consider the following four different types of *ad hominem* arguments.

First, *ad hominem* abusive arguments attack a person's individual characteristics, such as age, character, family, gender, ethnicity, appearance, socioeconomic status, professional, or religious or political beliefs. Arguments of this type imply that there is no reason to take a person seriously, as the argument is against the person rather than against the person's position on an issue. Second, guilt by association arguments (also known as *poisoning the well* arguments) attempt to repudiate a claim by attacking not the claimer himself or herself, but the company he or she keeps (or doubting the reputation of those with whom the claimer shares opinions).

Third, *tu quoque* ("you too") arguments are constructed to refute a claim by attacking the claimer on the grounds that he or she has shown questionable conduct. The argument in this case attempts to show that behavior of the person making the claim is hypocritical or demonstrates a double standard. Fourth, vested interest arguments attempt to dispute a claim by stating that its proponents are motivated by the desire to take advantage of a situation.

Straw Man Arguments

Straw man arguments attempt to refute a claim by replacing it with a less plausible statement (the straw man) and then attacking the weaker claim, rather than dealing with the original claim. An interesting aspect of this argument is that it may contain good reasons against the weaker claim, but these reasons will be irrelevant to the original claim.

Ad Baculum Arguments

Ad baculum arguments (appeals to force) attempt to establish a conclusion by threat or intimidation. The speaker is concerned with persuading by force and not by reason.

Ad Verencundiam Arguments

Ad verecundariam arguments (appeals to authority) occur when we accept (or reject) a claim merely because of the prestige, status, or respect we have for its proponents (or opponents). The pattern of the fallacy of appeal to authority is to argue that a claim is true because authority X supports it. An argument that appeals to authority is a fallacy whenever that authority is not suitable to give evidence. Note that the fallacy is not in appealing to authority, but in appealing to authority that is not credible for a particular argument.

Argumentum ad Populum

Ad populum arguments (appeals to popularity) occur when we infer a conclusion merely on the grounds that most people accept it. The reasoning behind *argumentum ad populum* is, "If everyone else thinks this way, it must be right." The essence of this fallacy lies in our need to conform to popular views and conclusions.

Argument from Ignorance

This fallacy is committed whenever it is argued that something is true simply because it has not been proven false, or that it is false simply because it has not been proven true. Moreover, the fallacy of appeal to ignorance can be spotted when the same argument is used to support two different conclusions (e.g., we cannot prove that ghosts do not exist nor can we prove that they do exist; therefore, this lack of knowledge can be used in the arguments of both believers and disbelievers in ghosts).

Of course, there are many other fallacies (Sternberg, 1986). But perhaps the point is made that someone could know a lot, but think quite poorly with the knowledge he or she has. What is perhaps most disturbing is that an individual could score quite well on statewide mastery tests and other achievement tests, and yet be quite susceptible to these and similar fallacies. Perhaps we need a broader ideal, such as that of the critical thinker.

Future 2: The Ideal of the Critical Thinker

The first ideal is a limited one. A more impressive ideal, perhaps, is that of the critical thinker. This thinker is less likely to commit fallacies of the kind described above. The critical thinker is a good problem solver. In particular, he or she can take a problem and decompose the solution process into a series of steps: recognizing the existence of a problem, defining the nature of the problem, mentally representing the problem, allocating mental and physical resources for the solution of the problem, formulating a strategy to solve the problem, monitoring problem solution, and evaluating the solution after one has completed problem solving.

The goal is to apply these steps not just in school problems, but in the problems one encounters in everyday life. For example, one's car does not work well and is constantly in need of trips to the automobile repair shop. What should one do? One has recognized the existence of the problem. Next, one must define the problem: Is the automobile shop doing a poor job in repairs? Is the car too old and in need of replacement? Does it need a complete overhaul, rather than replacements done piece by piece? Once one has defined the problem, one formulates a strategy for solving it, and so forth.

An individual could be a very adept critical thinker and yet show only weak creative and practical thinking skills. My own university, Yale, is full of students with high test scores who are, presumably, reasonable criti-

cal thinkers. Yet many of them show no plethora of creative ideas, or of skills in knowing how to apply them to the real world the knowledge they have.

The skills involved in creative thinking are quite different from those involved in critical, or analytical, thinking. The individual needs to be able to create, invent, discover, explore, imagine, and suppose. A student could be quite good in remembering other people's ideas and even in analyzing these ideas. But the student might lack skills in coming up with his or her own ideas. At Yale, even some of our students with the highest SAT scores are not particularly strong in generating novel and valuable ideas of their own. They also are not necessarily flexible in adapting to change.

Do these skills in flexibility of thinking really matter? One might argue that, in a rapidly changing world, there are few skills that matter more. The pace of change today is so fast that those who cannot keep up with the changing times are doomed to fall victim to them. Flexible thinking is no longer a luxury; it is a necessity.

If one looks at the truly great people in any field, they do not tend necessarily to be those who distinguished themselves on tests. Indeed, we do not even know their test scores. Rather, they are individuals who distinguished themselves for their creative and sometimes practical accomplishments. They are people who made a difference.

Subotnik and her colleagues (1993) did a study of high-achieving individuals who attended Hunter College elementary and high schools. They found that these students performed better than average in terms of career prospects and future income, although few of them proved to be great at what they did. They were good, but with few exceptions, they were not great at what they did. They were people who were very adept at adapting to the system. However, for the most part, they were not the individuals who shaped the environments in which they lived.

The goal of creating critical thinkers is an admirable one, and presumably the attainment of this goal will reduce the number of people susceptible to the cognitive fallacies described above. But we risk developing a nation of critical thinkers who lack the originality and innovativeness that, to a large extent, have made the United States and other countries great. The greatest thinkers in history, in whatever their field, have gone beyond analyzing other people's ideas to generating their own important ideas.

Future 3: Successfully Intelligent Thinkers

A future of successfully intelligent thinkers is important to personal satisfaction and national achievement. Such thinkers have (a) the creative skills to generate new ideas; (b) the analytical abilities to know whether they are good ideas; and (c) the practical abilities to know how to implement the ideas and to persuade others of the value of their ideas. What are some of the creative decisions that successfully intelligent people make?

Redefine Problems

Redefining a problem means taking a problem and turning it on its head. Many times in life individuals have a problem and they just do not know how to solve it. They are stuck in a box. Redefining a problem essentially means extricating oneself from the box. This process is the synthetic part of creative thinking. A good example of redefining a problem is summed up in the story of an executive at one of the biggest automobile companies in the Detroit area. The executive held a high-level position, and he loved his job and the money he made on the job. However, he despised the person he worked for, and because of this, he decided to find a new job. He went to a headhunter, who assured him that a new job could be arranged easily. After this meeting, the executive went home and talked to his wife, who was teaching a unit on redefining problems as part of a course she was teaching on Intelligence Applied (Sternberg, 1986). The executive realized that he could apply what his wife was teaching to his own problem. He returned to the headhunter and gave the headhunter his boss's name. The headhunter found a new job for the executive's boss, which the boss—hav-

ing no idea of what was going on—accepted. The executive then got his boss's job. The executive decided for creativity by redefining a problem.

There are many ways teachers and parents can encourage children to define and redefine problems for themselves, rather than doing it for them. Teachers and parents can promote creative performance by encouraging their children to define and redefine their own problems and projects. Adults can encourage creative thinking by having children choose their own topics for papers or presentations, choose their own ways of solving problems, and sometimes having them choose again if they discover that their selection was a mistake. Teachers and parents should also allow their children to pick their own topics, subject to the adults' approval, on projects the children do. Approval ensures that the topic is relevant to the lesson and has a chance of leading to a successful project. Adults cannot always offer children choices, but giving choices is the only way for children to learn how to choose. A real choice is not deciding between drawing a cat or a dog, nor is it picking one state in the United States to present at a project fair. Giving children latitude in making choices helps them to develop taste and good judgment, both of which are essential elements of creativity. At some point everyone makes a mistake in choosing a project or in the method he or she selects to complete it. Teachers and parents should remember that an important part of creativity is the analytic part—learning to recognize a mistake—and give children the chance and the opportunity to redefine their choices.

Do Not Assume That Creative Ideas Sell Themselves: Sell Them

Everyone would like to assume that their wonderful, creative ideas will sell themselves. But as Galileo, Edvard Munch, Toni Morrison, Sylvia Plath, and millions of others have discovered, they do not. On the contrary, creative ideas are usually viewed with suspicion and distrust. Moreover, those who propose such ideas may be viewed with suspicion and distrust as well. Because people are comfortable with the ways they already think, and because they probably have a vested interest in their existing way of thinking, it can be extremely difficult to dislodge them from their current way of thinking.

Thus, children need to learn how to persuade other people of the value of their ideas. This selling is part of the practical aspect of creative thinking. If children do a science project, it is a good idea for them to present it and to demonstrate why it makes an important contribution. If they create a piece of artwork, they should be prepared to describe why they think it has value. If they develop a plan for a new form of government, they should explain why it is better than the existing form of government. At times, teachers may find themselves having to justify their ideas about teaching to their principal. They should prepare their children for the same kind of experience.

Recognize That Knowledge Can Either Facilitate or Impede Creativity, and Act Accordingly

Some years ago, I was visiting a very famous psychologist who lives abroad. As part of the tour he had planned for me, he invited me to visit the local zoo. We went past the cages of the primates, who were, at the time, engaged in what euphemistically could be called "strange and unnatural sexual behavior." I, of course, averted my eyes. However, my host did not do the same. After observing the primates for a short period of time, I was astounded to hear him analyze the sexual behavior of the primates in terms of his theory of intelligence. I realized at that time, as I have many times since, how knowledge and expertise can either help or hinder creativity.

One cannot be creative without knowledge. Quite simply, one cannot go beyond the existing state of knowledge if one does not know what that state is. Many children have ideas that are creative with respect to themselves, but not with respect to the field because others have had the same ideas before. Those with a greater knowledge base can be creative in ways that those who are still learning about the basics of the field cannot be.

At the same time, those who have an expert level of knowledge can experience tun-

nel vision, narrow thinking, and entrenchment. Experts can become so stuck in a way of thinking that they become unable to extricate themselves from it. Such narrowing does not just happen to others. It happens to everyone, myself included. For example, at one point in my career, every theory I proposed seemed to have three parts. (Of course, there were three good reasons for this. . . .) At that point, I was "stuck on threes." Learning must be a lifelong process, not one that terminates when a person achieves some measure of recognition. When a person believes that he or she knows everything there is to know, he or she is unlikely to ever show truly meaningful creativity again. The upshot of this is that the teaching–learning process is a two-way process. I have as much to learn from my students and my children as they have to learn from me. I have knowledge they do not have, but they have flexibility I do not have, precisely because they do not know as much as I do. By learning from, as well as teaching to, one's children, one opens up channels for creativity that otherwise would remain closed.

Encourage Children to Identify and Surmount Obstacles

Buying low and selling high means defying the crowd. People who defy the crowd and think creatively almost inevitably encounter resistance. The fact is that obstacles will be encountered. The question is whether the creative thinker has the fortitude to persevere. I have often wondered why so many people begin their careers doing creative work and then vanish from the radar screen. I think I know at least one reason: sooner or later, they decide that being creative is not worth the resistance and punishment. The truly creative thinkers pay the short-term price because they recognize that they can make a difference in the long term, but often it is a long while before the value of creative ideas is recognized and appreciated.

One example of having to wait for ideas to be recognized occurred in my own experience. When I was very young, I became interested in intelligence and intelligence testing as a result of poor scores on intelligence tests. As a seventh grader of the age of 13, I decided it would be interesting to do a science project on intelligence testing. I found the Stanford-Binet Intelligence Scales in the adult section of the local library and started giving the test to friends. Unfortunately, one of my friends tattled to his mother, who reported me to the school authorities. The head school psychologist threatened to burn the book that contained the test if I ever brought it into school again. He suggested I find another interest. Had I done so, I never would have done all the work I have done on intelligence, which has meant a great deal to my life, and, I hope, something to the world. His opinion presented a major obstacle to me, especially as an early adolescent. However, because I surmounted that obstacle, I have been able to do research on intelligence, which has been very fulfilling for me.

Teachers can prepare children for these types of experiences by describing obstacles that they, their friends, and well-known figures in society have faced while trying to be creative; otherwise, children may think that they are the only ones confronted by obstacles. Teachers should include stories about people who weren't supportive, about bad grades for unwelcome ideas, and about frosty receptions to what they may have thought were their best ideas. To help children deal with obstacles, teachers can remind them of the many creative people whose ideas were initially shunned and help them to develop an inner sense of awe of the creative act. Suggesting that children reduce their concern over what others think is also valuable. However, it is often difficult for children to lessen their dependence on the opinions of their peers.

When children attempt to surmount an obstacle, they should be praised for the effort, whether or not they were entirely successful. Teachers and parents alike can point out aspects of the children's attack that were successful and why, and suggest other ways to confront similar obstacles. Having the class brainstorm about ways to confront a given obstacle can get them thinking about the many strategies people can use to confront problems. Some obstacles are within oneself, such as performance anxiety. Other obstacles are external,

such as others' bad opinions of one's actions. Whether internal or external, obstacles must be overcome.

Encourage Sensible Risk Taking

When creative people defy the crowd by buying low and selling high, they take risks in much the same way as do people who invest. Defying the crowd means risking the crowd's wrath. However, there are levels of sensibility to remember when defying the crowd. Creative people take sensible risks and produce ideas that others ultimately admire and respect as trend setting. In taking these risks, creative people sometimes make mistakes and fail.

I emphasize the importance of sensible risk taking because I am not encouraging risking life and limb for creativity. To help children learn to take sensible risks, adults can encourage them to take some intellectual risks with courses, activities, and what they say to adults to develop a sense of how to assess risks. Nearly every major discovery or invention entailed some risk. When a movie theater was the only place to see a movie, someone created the idea of the home video machine. Skeptics questioned if anyone would want to see videos on a small screen. Another initially risky idea was the home computer. Many wondered if anyone would have enough use for a home computer to justify the cost. These ideas that were once risks are now ingrained in our society.

I took a risk as an assistant professor when I decided to study intelligence, as the field of intelligence has low prestige within academic psychology. When I was being considered for tenure, it came to my attention that my university was receiving letters that questioned why it would want to give tenure to someone in such a marginal and unprestigious field. I sought advice from a senior professor, Wendell Garner, telling him that perhaps I had made a mistake in labeling my work as being about intelligence. Indeed, I could have done essentially the same work but labeled it as being in the field of "thinking" or of "problem solving," which were fields with more prestige. His advice was that I had come to Yale wanting to make a difference in the field of intelligence. I had made a difference, but now I was afraid it might cost me my job. I was right: I had taken a risk. He maintained that there was only one thing I could do—exactly what I was doing. If this field meant so much to me, then I needed to pursue it, even if it meant losing my job. I am still at the university, but other risks I have taken have not turned out as well. When taking risks, one must realize that some of them will not work, and that is the cost of doing creative work.

Few children are willing to take risks in school, because they learn that taking risks can be costly. Perfect test scores and papers receive praise and open future possibilities. Failure to attain a certain academic standard is perceived as deriving from a lack of ability and motivation and may lead to scorn and lessened opportunities. Why risk taking hard courses or saying things that teachers may not like when that may lead to low grades or even failure? Teachers may inadvertently encourage children to learn only to "play it safe" when they give assignments without choices and allow only particular answers to questions. Thus, teachers need not only to encourage sensible risk-taking, but also to reward it. Research within an investment framework has yielded support for this model (Lubart & Sternberg, 1995). This research has used tasks such as (a) writing short stories using unusual titles (e.g., the octopus' sneakers); (b) drawing pictures with unusual themes (e.g., the earth from an insect's point of view); (c) devising creative advertisements for boring products (e.g., cufflinks); and (d) solving unusual scientific problems (e.g., how we could tell if someone had been on the moon within the past month?). This research showed creative performance to be moderately domain specific and to be somewhat distinct from IQ-based performance. The practical component adds to the creative component the ability to implement one's ideas and to convince others of the worth of one's ideas. We have studied the practical component through the construct of tacit knowledge where what one needs to know usually is not explicitly taught and often is not even verbalized (Sternberg et al., 2000). Our research shows that practical and academic (analytical) intelligence are relatively distinct, but both are needed for on-the-job success.

Future 4: Wisdom in Addition to Successful Intelligence

Successful intelligence may not be enough. The top-level managers at companies such as Enron, Global Crossing, and WorldCom were, for the most part, nothing if they were not smart and well educated. Yet, one cannot help feeling that something fundamental was missing in the way they were educated. Similarly, today's consummate terrorist defies the stereotype of the poorly educated ignorant peasant who, having nothing better to do, joins up with a movement and blindly follows orders while showing no personal initiative at all. On the contrary, many of the terrorists who are covertly walking our streets are smart and well educated and, when their plans go awry, use their wits to get these plans back on track. Once again, it appears that something was fundamentally wrong in their education. What is that something? I believe it is that, for the most part, we are teaching students to be intelligent and knowledgeable, but not how to use their intelligence and their knowledge. Schools need to teach for wisdom and not just for factual recall and superficial levels of analysis.

When schools teach for wisdom, they teach students that it is important not just what you know, but how you use what you know—whether you use it for good ends or bad. They are teaching what the Bush administration referred to recently in a White House conference as the "fourth R": responsibility. Smart but foolish and irresponsible people exhibit four characteristic fallacies in their thinking. First, the fallacy of egocentrism occurs when people think the world centers around them. Other people come to be seen merely as tools in the attainment of their goals, to be used and then discarded as the egomaniacs' needs change. Why would smart people think egocentrically? Conventionally smart people often have been so highly rewarded for being smart that they lose sight of the needs and desires of others.

Wisdom requires one to know what one knows and does not know, as well as what can be known and cannot be known at a given time and place. Smart people often lose sight of what they do not know, leading to the second fallacy.

Second, the fallacy of omniscience results from people's starting to feel that not only are they expert in whatever they trained for, but that they are knowledgeable about nearly everything. They then can make disastrous decisions based on knowledge that is incomplete but that they do not recognize as such.

Third, the fallacy of omnipotence results from the feeling that if knowledge is power, then omniscience is total power. People who are in positions of power may start to imagine themselves to be all powerful. Worse, they forget the old saying that power corrupts, but absolute power corrupts absolutely. At the same time, they fail to reckon with the potential consequences of their actions because of the next fallacy.

Fourth, the fallacy of invulnerability comes from people's view that if they are all knowing and all powerful, then they can do what they wish. Because they are all knowing, they believe can get away with anything. Most likely, they convince themselves they won't get caught. Even if they do, they believe they can work their way out of being punished because they are smarter than those who have caught up with them.

If foolish (but smart and often highly accomplished) people commit these fallacies, what do wise people do? I define wisdom as the application of intelligence and experience toward the attainment of a common good. This attainment involves a balance among (a) intrapersonal (one's own); (b) interpersonal (other people's); and (c) extrapersonal (more than personal, such as institutional) interests, over the short and long term. Wise people look out not just for themselves, but for all toward whom they have any responsibility. An implication of this view is that simply being smart is not enough. It is important to be wise, too.

There are several reasons that schools should seriously consider including instruction in wisdom-related skills in the school curriculum. First, knowledge is insufficient for wisdom and certainly does not guarantee satisfaction, happiness, or behavior that looks beyond self-interest. Wisdom seems a better vehicle to the attainment of these goals. Second, wisdom provides a way to enter considered and

deliberative values into important judgments. One cannot be wise and at the same time impulsive, mindless, or immoral in one's judgments. Third, wisdom represents an avenue to creating a better, more harmonious world. Dictators such as Adolph Hitler and Joseph Stalin may have been knowledgeable. They may even have been good critical thinkers, at least with regard to the maintenance of their own power. However, they were not wise. Fourth and finally, students, who later will become parents and leaders, are always part of a greater community. Hence, they will benefit from learning to judge rightly, soundly, and justly on behalf of their communities.

If the future is plagued with conflict and turmoil, this instability does not simply reside out there somewhere. It resides and has its origin in ourselves. For all these reasons, students need not only to recall facts and to think critically (and even creatively) about the content of the subjects they learn, but also to think wisely about them.

Wisdom can be taught in the context of any subject matter. Our own current research, funded by the W.T. Grant Foundation, involves infusing teaching for wisdom into American history. Students learn to think wisely, and especially to understand things from diverse points of view across time and space. For example, what one group might consider a "settler," another group might consider an "invader." What one group might consider "manifest destiny," another group might consider "land theft." Students also learn that in the current world, peace, or at least absence of conflict, depends in large part on being able to understand how other nations and cultures see problems and their solutions differently from the way we do. The goal is not necessarily to accept these other points of view or even necessarily to achieve some kind of accommodation. Rather, the goal is to understand that resolution of difficult life problems requires people to want to understand each other and to reach a resolution, whenever possible, with which all of those people can live. In our own research, students being taught to think wisely are being compared with a control group that learns the historical material in a standard way.

The road to teaching for wisdom is bound to be a rocky one. First, entrenched educational structures, whatever they may be, are difficult to change. Wisdom is not frequently taught in schools. In general, it is not even discussed, at least directly. Second, many people will not see the value of teaching something that does not have as its primary focus the raising of conventional test scores. Teaching for wisdom is not inconsistent with raising test scores, but teaching to tests is not its primary goal. Teaching for wisdom relates to President Bush's "fourth R"—responsibility—more closely than it relates to the conventional "three R's" that tend to be tested. Third, wisdom is much more difficult to develop than is the kind of achievement that can be developed and then readily tested via multiple-choice tests, such as "What is the capital of France?" Finally, people who have gained influence and power in a society via one means, such as money, high test scores, or parental influence, are unlikely to wish to give up that power or to see a new criterion be established on which they do not rank as favorably. Thus, there is no easy path to wisdom or teaching for wisdom.

Wisdom might bring us a world that would seek instead to better itself and the conditions of all the people in it. At some level, we as a society have a choice. What do we wish to maximize through our schooling? Is it just knowledge? Is it just intelligence? Or is it also wisdom? If it is wisdom, then we need to put our students on a much different course. We need to value not only how they use their outstanding individual abilities to maximize their attainments but how they use their individual abilities to maximize the attainments of others as well. We need, in short, to value wisdom. And then we need to remember that wisdom is not just about what we think, but more importantly how we act.

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