

The Most Daring Education Reform of All



BY DIANA SENECHAL

It is an old story, a worn deck of words: reformers insist that traditional schooling has failed and that only a new approach can save us. John Dewey wrote in 1899 that “it is radical conditions which have changed, and only an equally radical change in education suffices.” He characterized the traditional classroom as “rows of ugly desks placed in geometrical order,” all made for listening, which meant “the dependency of one mind upon another,” or “passivity, absorption.”¹ Over the past century, many reformers have disparaged whatever preceded their propos-

*Diana Senechal taught English and theater for four years in the New York City public schools and previously has worked in editing, computer programming, and counseling. Her translations of the Lithuanian poetry of Tomas Venclova have been published in two books, *Winter Dialogue* and *The Junction*, as well as numerous literary journals. In 2009, she served on the English Language Arts Work Team for the Common Core State Standards Initiative. Her education writing has appeared in *Education Week*, *the Core Knowledge Blog*, *Joanne Jacobs*, *GothamSchools*, and the *Washington Post’s Answer Sheet*. She is currently writing a book on the loss of solitude in schools and culture.*

als, be it the public school system as a whole, a literature curriculum, the teacher standing at the front of the room, or the use of the blackboard. The old ways have to go, they say; to keep them is to cling to failure. In demanding an overhaul, these reformers echo an old American theme: a longing for a new country, a new life, a new structure, a new faith, a new solution, a new invention, a new technology, a new self. They partake in an American tradition without heeding history or tradition; they glorify the new because it is new, while disparaging the old because it is old. Often their “new” reform is not new at all, nor are the “old” practices obsolete. Nonetheless, they brandish jargon, break apart schools, toss out curricula, and proclaim the superiority of their plans, chaining education to passing fashions without considering what should endure.

In recent years, some particularly vocal reformers have demanded that we infuse all learning with “21st-century” skills; like their predecessors, they clamor for newness. The 21st-century-skills movement consists of a loose association of educators, policymakers, government leaders, business and technology firms, and others. Citing changes in the global economy and national job market, they call for an emphasis on 21st-century

skills in all of education, from elementary school through college. These skills (all of which existed long before the 21st century) include broad concepts such as creativity, innovation, problem solving, communication, collaboration, teamwork, and critical thinking, as well as media and technology literacy, financial literacy, health literacy, and global literacy. Leading the charge has been a coalition called the Partnership for 21st Century Skills (P21), whose membership organizations include Adobe Systems, Apple, Dell, Hewlett-Packard, Microsoft, and Verizon. P21 argues that “every aspect of our education system ... must be aligned to prepare citizens with the 21st century skills they need to compete.” Accordingly, it offers schools, districts, and states “tools and resources to help facilitate and drive change.”²

Technology figures large in the 21st-century-skills movement, but technology itself is not the problem. It is a reality of life, and in one form or another it has always surrounded us. Having worked as a computer programmer and electronic publisher, having developed an interactive database for my former school, having recorded and mixed songs on my computer, having stayed up many a night to get a program right, I know how intriguing and promising technology can be. But having wasted many hours on the Internet, I also know how it can distract. Technology should be a tool at our disposal; it should serve rather than hinder us. When states and districts heed reformers’ calls for technology in all grades and subjects, this leads to situations where teachers must use technology in class, whether or not it serves the lesson well. The problem lies in the reformers’ haste and dogmatism.

Far too often, the 21st-century-skills argument carries a tone of urgency, even emergency: We no longer live in a world of books, paper, and pen. Children grow up surrounded by digital media. They can communicate with peers around the world; they can find obscure information in seconds. Yet they are unprepared for the jobs of today. We still treat them as passive recipients of knowledge; we still drill them on facts that they could just as easily Google. If we do not act now, we will lose our global competitiveness—so everyone who cares about our future should jump on board. Employers need people who can create, solve problems, work together, use technology, and think critically. We must make our students critics, innovators, and team players; we should teach them to communicate in the broad sense of the word by infusing their coursework with blogging, recording, filming, texting, collaborating, and tweeting.

Proponents of 21st-century skills often assume that the schools’ primary objective is to meet the demands of the day—including the demands of the workplace and transient fashions. Even the movement’s most reasonable and thoughtful proponents sometimes share this assumption. In his report *Defining a 21st Century Education*, Craig D. Jerald acknowledges the importance of a traditional core curriculum yet places overwhelming emphasis on employers’ demands. In *The Global Achievement Gap*, Tony Wagner seems at times oblivious to the deficiencies* of the schools he praises (and their notable similarities at times to the very schools he chides).³ Yet both authors deserve credit for steering clear of the movement’s excesses. Too often, the champions of the move-

ment laud the liberal arts in the abstract, but make practical suggestions that trivialize subject matter. P21 suggests that students engage in projects such as making an audio commercial for a favorite short story, devising a business plan for selling snacks, or creating an online game to expand younger students’ global awareness.⁴ (For several more examples of teaching suggestions from P21, see page 6.) P21 claims to support “mastery of core academic subjects” but disregards the structured study, discipline, and concentration that such mastery entails.

As Diane Ravitch has shown (see page 12), there is nothing new about the proposals of the 21st-century-skills movement. They echo progressive ideas of the past 100 years. Since the late 19th century, progressives have demanded that education be more

At its fullest and best, education prepares us to be with others and apart, to enjoy the life of the mind, to survive and prosper, to bring up new generations, to act with integrity and conscience, to pursue useful and interesting work, and to participate in civic and cultural action and thought.

immediate, useful, and relevant, with more attention to hands-on activities and less emphasis on formal academic study and explicit instruction. While some of these ideas, taken in moderation, have the potential to enhance a curriculum, reformers have often carried them to extremes, forsaking intellectual study in the name of “real life.”⁵ In 1898, Dewey wrote that systematic reading and writing instruction was rendered unnecessary by “the advent of quick and cheap mails, of easy and continuous travel and transportation, of the telegraph and telephone, the establishment of libraries,” and other changes. The schools’ “fetich” [*sic*] for reading and writing instruction was a hindrance, he said; “the claims of



*Wagner describes a visit to an integrated math, science, and technology class, where ninth- and tenth-graders work in pairs at rectangular tables. They have “two worksheets that contain perhaps twenty examples of four different ways to represent a mathematical relationship: words, equations, table of values, and graphs. But the examples are all out of order. Their task is to match up the correct equation, table of values, word description, and graph that all represent the same numerical relationship” (page 246). Wagner praises what he sees here, but the activity involves matching up items on a worksheet, much like the activities he disparages (see pages 50–51 and elsewhere). One might argue that, in this case, the activity helps students see mathematical relationships in different ways—but it is not clear that they know how to work with these mathematical relationships or even that they spend much time on math.

the present should be controlling.”⁶ The mantra of the “claims of the present” has been repeated so often that we must ask: Is it perhaps in the nature of a good education to be slightly out of step with the present? Could it be that in order to endure, an education must be unfettered by the times? Is it possible that the claims of the present—which we often cannot accurately identify—should *not* be controlling?

Perhaps so. Efforts over the decades to bring schools up to date have not worked as intended. They have met with resistance or obstacles; they have caused losses; they have missed the mark. Of course schools should teach critical thinking, problem solving, and other skills; they should help students master new technologies that can further their intellectual development. But they cannot do any of this without a foundation. When hyperbole goes unchecked, the reform loses sight of the complements it needs.

Reformers forget, for instance, that knowledge enhances the very learning process in a number of ways, as Daniel T. Willingham and other cognitive scientists have found.⁷ They forget that fluency in the fundamentals allows students to engage in inquiry. They forget that content is not simply dry matter; it has shape and meaning; it is the result of centuries of critical thought and the basis for future critical thought. To neglect to teach our intellectual and cultural traditions is to limit the kind of thinking that students will be able to do throughout their lives.

What would our schools gain by embracing 21st-century skills, and what would they lose? It is the loss that deserves special attention, as the 21st-century reformers, in their euphoria, have seen only gain in their plans. The gain is possible, but only if we put the

What Does—and What Should—P21 Advocate?

As Diana Senechal explains (see page 4), the education field is replete with faddish reform ideas. Of course, change is essential. Without it, we can't make progress. But not all change is progress—and some changes hinder progress. This is the reality that the 21st-century-skills movement must face head-on. When we look back 5 or 10 years from now, will this movement be a faint memory, another fad that temporarily got in the way of serious educational improvement? Or will it be remembered as the catalyst for tackling tough issues like the achievement gap?

This movement does have the potential to spur real progress. Look at the initial success of the Partnership for 21st Century Skills (P21). It has the backing of several major corporations

as well as influential politicians and educators. But success with students is far from guaranteed. P21 has vocal critics concerned not with the organization's rhetoric, which includes plenty of calls for content plus skills, but with its actual lesson suggestions for teachers. By and large, the critics say, these lessons are much too light on academic content and much too heavy on skills of questionable value.

So the real debate seems to be not about skills versus content, but about the content itself. For example, everyone acknowledges that to develop critical thinking (which seems to be the most sought-after ability), students must have something to think about. What they don't agree on is this: should the content

be traditional liberal arts content, or just anything that makes students think? Fortunately, over the past several decades, in hundreds of studies, cognitive scientists have answered this question. Simply put, unless one reaches true expertise (which comes after many years of intensive, post-graduate study and experience), skills do not transfer from one content area to the next. So, in order to think critically about a particular topic, students must study content directly related to that topic. (For more on this, see page 17.)

This doesn't resolve the debate, but it should shift our discussion. Clearly, just any content that makes students think will not do. If students can only think critically about topics they have actually studied, then selection of

content is of the utmost importance.

Here, Lynne Munson and Laura Bornfreund of Common Core initiate a discussion about content that they hope will play out in schoolhouses and statehouses across the country. Common Core, a nonprofit dedicated to the liberal arts, has been an outspoken critic of P21, which is reflected in the first part of the sidebar where Munson and Bornfreund compare some of the lesson suggestions from P21 that they find troubling with much more rigorous content taught in high-performing countries. In the second part of this sidebar, Munson and Bornfreund take on a different task: they present a handful of lesson ideas from P21 that could enhance studies of academic content. After all, everyone supports teaching content and skills—we just need to be determined and energetic enough to develop examples that we all agree are worthy of classroom time. That work will decide whether the 21st-century-skills movement becomes a driver of real improvement or just another fad.

—EDITORS

**BY LYNNE MUNSON AND
LAURA BORNFREUND**

“While American students are spending endless hours preparing to take tests of their basic reading and math skills, their peers in high-performing nations are reading poetry and novels, conducting experiments in chemistry and physics,

Lynne Munson is the president and executive director of Common Core. She is an author and former deputy chairman of the National Endowment for the Humanities. Laura Bornfreund is an independent consultant to Common Core. Previously, she taught for four years in Orange County Public Schools in Florida.



skills in proper perspective, recognizing their long legacy and their dependence on subject matter knowledge.

The classroom that 21st-century-skills proponents envision—a place where students are collaborating, creating, and critiquing—may not be as promising as it seems. A video by the George Lucas Educational Foundation shows middle school students comparing two magazine photos in light of gender roles; other students filming a poetry project; third-graders watching a nature film and learning how the film was made; fourth-graders making animated short videos; seventh-graders analyzing newspaper photos of the war in Iraq; and other lessons and activities. These examples are supposed to show what students *should* be doing in class: discussing important issues, analyzing the information around them, and creating things. Near the end of the video, the narrator comments: “As courses and projects featuring elements of media literacy find

their way into more and more classrooms, writing English might become just one of several forms of expression, along with graphics, cinema, and music, to be taught in a basic course called communication.”⁸ This is where the losses begin.

First of all, with such a diffuse curriculum, students lose the opportunity to master the fundamentals of any subject. Students are supposed to jump into “big issues” (for which they may have no preparation) and to express themselves through numerous media before they are fluent in any. How can students learn the basics, not to mention the more complex ideas, when they are spread so thin? There have been similar efforts over the past century to generalize and expand subjects beyond their disciplinary base—for instance, by replacing history with social studies—and the drawbacks have been similar: students end up writing about their own communities, reading charts and graphs in a superficial

making music, and studying important historical issues. We are the only leading industrialized nation that considers the mastery of basic skills to be the goal of K–12 education.” That’s the conclusion drawn by education historian Diane Ravitch and AFT secretary-treasurer Antonia Cortese in *Why We’re Behind: What Top Nations Teach Their Students But We Don’t*, a recent report published by Common Core.

Mastery of basic skills is the beginning of an education, not its end. On that, at least, virtually all in the education field can agree. But what to do about it is a much more controversial topic. The big debate—in which Common Core is a vocal participant—is about the best means for students to acquire higher-order skills like creativity and critical thinking.

Cognitive scientists have already provided much of the answer: thinking, problem solving, and other higher-order skills are only possible when one has relevant knowledge. So we may talk about skills and content as if they were separate things, but in reality they are inextricably intertwined. Unfortunately, critical thinking can’t be strengthened by working on a math game and then used to analyze a historical document. To solve a thermodynamics problem, students must study thermodynamics. To analyze historical documents about the Civil War, students must study the Civil War. Even having analyzed documents about the Revolutionary War will only help a little bit: if students don’t know the people, places, events, and context of the Civil War, they won’t be able to analyze documents from that war.

So skills are important, but what skills our young people acquire depends on the content they have studied. This got us

wondering: what do students in high-performing countries study? *Why We’re Behind* attempts to answer that question by examining countries that outperform us on the international assessment PISA (Programme for International Student Assessment). Each of the nine countries we looked at (Australia, Canada, Finland, Hong Kong, Japan, Netherlands, New Zealand, South Korea, and Switzerland) provides its students with a content-driven, comprehensive education in all core subjects in which students develop higher-order skills as they complete sophisticated assignments.

To try to make the debate over 21st-century skills more concrete, we have selected several examples of content-rich education offered in these nations and contrasted them with lesson ideas from the “skills maps” on P21’s website. We think it is clear that these high-performing nations have found an effective approach for helping students become successful, well-educated citizens. But we didn’t stop there. Keeping the high-quality examples from around the world in mind, we pored over P21’s lesson ideas for suggestions of comparable quality. We found none we can enthusiastically endorse. But we did find a few that could provide “added value” to a student’s education if they were incorporated in a sequenced, content-rich curriculum. We hope P21 will use these examples as models to revise its current skills maps.

I. High-Performing Countries Have High Expectations

Science

New Zealand

In New Zealand, students in grades 7–8 learn to explain how the interaction between ecological factors and natural

selection leads to genetic changes within populations. They also investigate physical phenomena (in the areas of mechanics, electricity, electromagnetism, light and waves, and atomic and nuclear physics), and produce qualitative and quantitative explanations for a variety of complex situations.¹

Partnership for 21st Century Skills

P21 suggests that eighth-graders “view video samples from a variety of sources of people speaking about a science-related topic (e.g., news reporters, news interviews of science experts, video podcasts of college lectures, segments from public television documentaries, or student-made videos of parents and professionals in their community). Students rate the videos on the degree to which the person sounded scientific, then identify characteristics of speech pattern, word choice, level of detail, and other factors that influenced their perceptions. Students discuss ways that scientific communication differs from other forms of expression, and why those differences might be useful to scientists, then design a card game, board game, or video game that will help teach their peers some of the ‘rules’ of science communication that they’ve observed.”²

Analysis

While students in New Zealand learn central concepts of genetics and the physical sciences, and must think critically about complex theories like natural selection, P21 wants American students merely to recognize when someone has “sounded scientific.” Based on what? Not scientific knowledge, but visual and audible cues. P21’s sample lesson is devoid of specific content or educational purpose.

way, learning disconnected tidbits about cultures around the world, and knowing little history. To learn something well, we need focused study and practice. Survey courses are essential, but their topics should not be as broad and vague as “communication.” Filming a poetry project and analyzing war photos may be fruitful activities, but a communications course consisting of disjointed projects is unlikely to teach students how to communicate well. Such a course may offer, in the words of Robert Frost, “A little bit of everything, / A great deal of none.”

Second, in their efforts to make schools current, reformers neglect to offer the very stability that students need in order to make sense of the choices, clamor, and confusion of the present—

that is, to exercise critical thinking. If teachers must ceaselessly change their curriculum to match what is happening in society (or, more narrowly, the workplace), neither they nor their students will have the opportunity to step back and reflect. It is difficult to think about the workings of a roller coaster while on a roller coaster ride; it is difficult to analyze weather patterns while driving through a blizzard. Critical thinking requires perspective and a certain distance from one’s personal experiences. Schools need to offer a degree of stability and quiet—precisely so that students may grapple with important questions and teachers may carry out their responsibilities with integrity.

If we always must be up to date, then we are continually dis-

Indeed, what it teaches wouldn’t make students knowledgeable citizens. It is more likely to make them gullible consumers who could easily be duped by infomercials with actors who sound scientific. Whether a person sounds scientific is not important. What is important is whether what the person is saying is scientifically sound. A student can only make that judgment if he or she possesses the relevant scientific content knowledge.

Social Studies

Finland

Finnish students in grades 5–6 study the dawn of the modern era, specifically the “changes in the European’s values and conception of the world at the end of the Middle Ages: the Renaissance in art, the Reformation in religion, and science’s expansion of the conception of the world.” These young students also learn to “recognize the continuity of phenomena from one era to another and understand that change is not the same as progress, and does not mean the same thing from the perspectives of different people and groups.”³

Partnership for 21st Century Skills

One of P21’s proposed fourth-grade social studies lessons asks students to “work in small groups to discuss problems that they have observed or heard about in their school such as bullying or graffiti. Convening as a whole class, students should come to some common agreement about the problems that are most meaningful. After the problem has been selected by consensus, students take responsibility for specific elements of an inquiry into the causes of and possible solutions to the problem.”⁴

Analysis

The Finnish example allows students to develop analytical skills as they study historical examples of creativity, problem

solving, and innovation that are important for understanding Western civilization. The other does not. The lesson plan suggested by P21 is supposed to build social and cross-cultural skills. This is a worthy goal, but keeping our limited class time in mind, it ought to be pursued along with other worthy goals, such as enriching students’ understanding of the world. There are plenty of examples from history that would engage students in developing social and cross-cultural skills—why not use them? For example, why not have students study the cross-cultural challenges and opportunities created by the Silk Road?

Geography

Switzerland

In 12th grade, students are expected to know core topics in geography like the earth’s structure, climates, habitats, populations, and energy sources. For example, an exam for students who want to go to college includes several items on earthquakes, including “define the notion of magnitude,” “define the notion of intensity,” and “list four elements that influence the intensity of an earthquake.”

Students also must learn how geography intersects with other disciplines by studying topics like the “interdependence of economic spaces,” “migrations on a global scale,” and the historical, political, and economic influences on the “slicing and re-slicing of regions.”⁵

Partnership for 21st Century Skills

P21 recommends that 12th-graders “make an inventory of the way that geography content (landscapes, globes, maps, land uses, cultural depictions, etc.) are used as company logos, web sites, backdrops, screen savers, panoramas, etc. in the digital and print media and categorize them by media and content.” They are instructed to “assess the appropriateness of the geography content used as a backdrop relative to

the expectations (criteria) that people use for getting a person’s attention.”⁶

Analysis

How does studying a company logo deepen a student’s knowledge of geographic features or population growth or cultures? It doesn’t. It fails to give students even a glimpse of what the discipline of geography is all about. Meanwhile, Swiss students are developing their knowledge of, and ability to think critically about, topics that are central to the discipline and how they intersect with history, economics, politics, globalization, and integration.

English Language Arts

Canada

In Canada, a high school graduation exam in British Columbia provides students with passages from *Hamlet*, *The Tempest*, and *King Lear*. Students select one of the following prompts and spend roughly 25 minutes writing their responses:⁷

“Show the significance of this exchange between Hamlet and Gertrude. Refer both to this passage and to elsewhere in the play.”

“With reference both to this passage [from *The Tempest*] and to elsewhere in the play, show that this passage contributes to theme.”

“Discuss the parallels between the father-child relationship found both in these passages [from *King Lear*] and elsewhere in the play.”

Partnership for 21st Century Skills

Consider this example lesson for 12th-graders from P21’s website: “Students translate a piece of dialog from a Shakespearean play into a text message exchange and analyze the effect of the writing mode on the tone or meaning of the dialogue. Students then discuss audience and purpose in relation to communication media.”⁸

tracted and diverted. As soon as a school has caught up with the newest pedagogy and the technology that supports it, something newer comes along, making the newly acquired methods and machines seem dated once again. In the scramble to keep up, schools reflect the incoherence of the larger culture. They become susceptible to suggestions that what they are doing is not good enough, not current enough, not cutting-edge enough. Once, at a school where I taught, I heard a visiting administrator speak to science teachers about ways to boost student performance at the science fair. He told them never to have students use PowerPoint for the presentations. "PowerPoint sends up a

red flag," he said. "It's telling everyone that your school is still in the '90s." He recommended using Flash instead. He wasn't concerned with the deficiencies (or strengths) of PowerPoint per se, but rather with its appearance and connotations. It would be unthinkable, presumably, for a student to submit a brilliant science report on paper. Substance defers to fashion in such a world view.

If we keep on chasing the newest thing, we will not only distract ourselves but repeat old mistakes. Educator, historian, and philosopher Isaac Leon Kandel criticized this tendency in 1943, noting in *The Cult of Uncertainty* that too many educators and education

Analysis

Canadian students could not successfully answer the exam questions posed if they had not read, analyzed, and discussed several of Shakespeare's plays well in advance of the test. While we are pleased that P21 does reference Shakespeare, the lesson it offers isn't actually focused on the works themselves. The lesson simply uses Shakespeare as a vehicle to teach something else—text messaging. Any written work could be used. Worse, most students are texting constantly; they do not need practice. And isn't it obvious that the effect on the tone will be to make it less formal and the effect on the meaning will be to make it less nuanced? Don't we want our students to study Shakespeare in a more rigorous way?

II. P21 Can Do Better

The question of what content to teach is as old as the very idea of education. And it is indeed a question worth revisiting time and again, and worth putting hard thought into the best means by which to teach that content. With that in mind, here are three eighth-grade lesson suggestions from P21 that could in fact be worthy of classroom time (a much more precious resource than many reformers realize). What makes these examples stand out from the rest of P21's lesson ideas is that they suggest interesting ways to go deeper into core academic subjects. Appropriately embedded in a unit and in a larger, content-rich curriculum, they have the potential to extend students' content knowledge while also developing their higher-order skills.

Science

"Students research how the physical and chemical properties of different natural and human-designed materials affect their decomposition under various conditions. They compare their findings to the



material evidence used by scientists to reconstruct the lives of past cultures, as well as create a map of their classroom as a future archeological site (including written descriptions of artifacts) discovered by scientists."⁹

Social Studies

"Working in teams of two to four, students explore the impacts and effects of an invention or technological innovation of the 19th century and create a position paper that analyzes the pros and cons of the invention (e.g., impact of the cotton gin on Southern plantations and slavery)."¹⁰

Geography

"Students use digital population data for the United States to analyze the population distribution of the country in 1860 and 1870, copy and paste the data and organize it using a spreadsheet, rank the states from highest to lowest in population, develop quartiles (group states on population size into quarters), color code the quartiles on maps for each year, and use the maps to write a narrative describ-

ing the changes in population distribution before and after the Civil War."¹¹

We recognize that P21 (and its corporate backers) wants to improve students' skills. But P21's current approach will not work because students will not acquire skills if they are not also developing their base of knowledge. And almost nothing in P21's current program addresses that need. The potentially useful examples we found among P21's lesson suggestions were few and far between. Ultimately, the problem is that P21's program is not aligned to any worthwhile content. We hope that anyone interested in improving student learning will take a careful look at *Why We're Behind* and the sophisticated ways that the world's top-performing nations provide students with a comprehensive, content-rich education that enables them to build both knowledge and skills. □

Endnotes

1. Common Core, *Why We're Behind: What Top Nations Teach Their Students But We Don't* (Washington, DC: Common Core, 2009), 40, www.commoncore.org/_docs/CCreport_whybehind.pdf.
2. Partnership for 21st Century Skills, *21st Century Skills Map: Science* (Tucson, AZ: Partnership for 21st Century Skills, 2008), 5, www.21stcenturyskills.org/documents/21stcenturyskills_map_science.pdf.
3. Common Core, *Why We're Behind*, 2.
4. Partnership for 21st Century Skills, *21st Century Skills Map: Social Studies* (Tucson, AZ: Partnership for 21st Century Skills, 2008), 15, www.21stcenturyskills.org/documents/ss_map_11_12_08.pdf.
5. Common Core, *Why We're Behind*, 74–75, 77.
6. Partnership for 21st Century Skills, *21st Century Skills Map: Geography* (Tucson, AZ: Partnership for 21st Century Skills, 2009), 6, www.21stcenturyskills.org/documents/21stcenturyskills_map_geog.pdf.
7. Common Core, *Why We're Behind*, 29.
8. Partnership for 21st Century Skills, *21st Century Skills Map: English* (Tucson, AZ: Partnership for 21st Century Skills, 2008), 6, www.21stcenturyskills.org/documents/21stcentury_skills_english_map.pdf.
9. Partnership for 21st Century Skills, *21st Century Skills Map: Science*, 4.
10. Partnership for 21st Century Skills, *21st Century Skills Map: Social Studies*, 7.
11. Partnership for 21st Century Skills, *21st Century Skills Map: Geography*, 9.

reformers “seek novelty rather than perfection and call this process ‘adapting education to changing needs.’”⁹ Reformers often chastise those who resist change, as though change were always correct. Thus reformers have ignored a great resource; the resisters may have something important to say. By no means should we be complacent—we have a lot of work to do—but we should never sacrifice our best judgment. That would be the worst form of complacency and of change. If we jump on the 21st-century-skills bandwagon (or any bandwagon) just because others say we should, we give up critical thought.

The 21st-century-skills movement brings a third loss, greater than all the rest. When schools rush to adopt whatever is supposedly modern, they lose sight of the true purposes of education.

Once we have established our core—our understanding of education’s meaning, purpose, and content—and once we have a curriculum rich in literature, history, science, mathematics, and arts, we can consider how to make necessary changes to our schools without falling prey to fads, without losing our equilibrium, without letting anyone convince us that things of lasting beauty are *passé*.



According to E. D. Hirsch, Jr., the central purpose used to be to create virtuous citizens with enough shared knowledge for all to participate in the public sphere.¹⁰ A complementary purpose of education is to prepare us for solitude, which is part of every life; if we know how to be alone, then we may be less prone to distraction, escapism, and boredom. Education also exists for its own sake: an endless adventure, a struggle, a

delight. At its fullest and best, education prepares us to be with others and apart, to enjoy the life of the mind, to survive and prosper, to bring up new generations, to act with integrity and conscience, to pursue useful and interesting work, and to participate in civic and cultural action and thought. If schools try to be up to date all the time, then they are reduced to chasing fads and obeying the whims of the market. Part of the schools’ work is to help prepare students for their future occupations, but they do not achieve this by scurrying to meet employers’ demands.

Employers may know what kinds of skills they need, but they do not necessarily know how this translates into instruction. Their perceptions are bound to the workplace and should not control

curricula. The Conference Board, an organization that disseminates business and economics information, prepared a survey in collaboration with three organizations: P21, Corporate Voices for Working Families, and the Society for Human Resource Management. They asked employers to rank various subjects and skills according to their importance. Only a small percentage of employers assigned a high rank to humanities, arts, history, and geography, while the vast majority assigned a high rank to teamwork, collaboration, professionalism, and work ethic.¹¹ But does this mean that students do not need humanities, arts, history, and geography? Certainly not—it is hard to imagine how one could be a good journalist or global business analyst without a background in history and geography, a good trade publisher or human rights

advocate without a background in humanities, or a good architect or graphic designer without a background in arts. As citizens, all employees need a strong foundation in the arts and sciences. Such education contributes to our quality of life in myriad ways—by enhancing our reasoning, vocabulary, and perspective, by creating common understandings, and by allowing for a varied life outside of work. If schools were to take employers’ priorities literally, they would emphasize group projects no matter what they contained. This would not be good academic or vocational education.

It is time to stop the waste. Instead of rushing to incorporate 21st-century skills in all aspects of school, instead of embracing any change for its own sake, we should pursue perfection in curriculum and pedagogy. Pursuing perfection is not the same as attaining it; it is unlikely that we will ever have anything close to perfect schools or a perfect society. Yet that is the generosity of perfection. It is unattainable, yet to strive for it is within our reach, and it always gives us more to strive for. It is striving that has led to great accomplishments in letters, sciences, arts, athletics, and manual trades; it is striving that has enabled humans to live and treat each other with dignity; it is striving that has sharpened our senses and our wits. It involves soul searching, as we must examine our performance daily, not in relation to test scores alone, but in relation to our ideals. Today the word “idealist” seems to connote fanciful or wishful thinking, but idealism need not be naive or flimsy. Musicians must be able to imagine how a piece should sound, and they must know how to come closer to that imagined version. The discrepancy does not break them, nor does it break a school. Perhaps that is a form of happiness: having something worth laboring for and having an inkling of how to go about it.

To pursue perfection, we must first establish the meaning and purposes of education, then refine the methods for fulfilling those purposes. We should dare to specify what we will teach: the disciplines, works, ideas, and historical periods; the things to be mastered, grasped, and pondered. Once we have established our core—our understanding of education’s meaning, purpose, and content—and once we have a curriculum rich in literature, history, science, mathematics, and arts, we can consider how to make necessary changes to our schools without falling prey to fads, without losing our equilibrium, without letting anyone convince

us that things of lasting beauty are passé. In an interview with John Merrow of Learning Matters, Diane Ravitch summed up the problem: “American education doesn’t need innovation. American education needs purpose; it needs definition; it needs a vision of what good education is; and it needs to focus on what’s important, which is good teachers, involved parents, willing students, adequate community resources, community support for education, and a solid, rigorous, coherent curriculum. Lacking all of those things, ... innovation is just another distraction, and it has been for many years.”¹²

In seeking perfection, we must cherish and strengthen what has worked. Forms of instruction deemed “traditional” have much to offer us still. Moreover, most practices require a union of opposing principles. For students to engage in inquiry, they must have a strong foundation of knowledge. To participate well in class or group discussions, students need to learn to listen. Student collaboration is important, but it requires that students also work alone, so that they may bring something to each other. And students become active learners not only by talking and doing, but by sitting still with their thoughts. Conversely, the student who cannot listen to others is trapped in his or her own limited perspective.

Reformers of different stripes often malign the “traditional” style of teaching, claiming that it has failed our children. Perhaps it worked in the past, they say, but it no longer works; perhaps it worked for an elite but not for the poor; perhaps it never worked to begin with. But what is this traditional teaching? Critics often say that in the old days, the teacher stood at the front of the room and lectured, and students took notes silently. Children, they say, were treated as “empty vessels” to be filled, not as thinking human beings. But this description fails to account for the variety in our tradition, which has included discussions, debates, projects, participatory lectures, seminars, laboratories, tutorials, and different ways of handling all of these. Moreover, it is not true that students who listen to the teacher are empty vessels. To the contrary, listening requires the exercise of knowledge and reasoning. William Torrey Harris wrote in 1897 that the recitation was an excellent way for students to learn from each other: “The pupil can, through the properly conducted recitation, seize the subject of his lesson through many minds. He learns to add to his power of insight the various insights of his fellow pupils.”¹³ Listening is by no means passive: a student who can silently ponder another person’s words will be able to enjoy lectures, plays, speeches, readings, and thoughtful conversations.

Those calling for 21st-century skills often point to the need for greater student engagement. But true engagement is not entertainment; it is involvement, which may be invisible at times. The traditional classroom encourages such involvement when the teachers teach subjects they know and love, the school has a true curriculum,* and the students live up to the demands of the course. In these cases, the teachers give stimulating and substantial lessons; students absorb the material, think about it on their

own, bring their questions and observations to class discussion, and strive for precision and thoughtfulness in their work. In contrast, when teacher preparation programs emphasize process over subject matter, when schools have weak curricula, and when many students fail to do homework, or are distracted and disruptive during class, the best aspects of this kind of classroom fall apart. The teacher’s effort goes into maintaining discipline, and students learn little.

Far too many reformers perceive a lack of student “engagement” but misdiagnose it. They assume that if only the students were more visibly active, the learning would flow from there. Everything, then, is directed toward keeping students busy and stimulated: visuals, group work, individualized instruction, use of social networking tools such as Facebook, the building of self-esteem, and so forth. But this emphasis on activity and good feeling comes at a great cost and leads to complications. Students do not develop the ability to listen, to absorb material, or to think on their own. They become accustomed to rapid chatter, constant visual displays, and frequent celebrations of their accomplishments, which may not be substantial. Students reach the point where they cannot tolerate stillness, where they need to be facing their peers, doing something with their hands, and talking. Or they reach a point where they cannot take their peers any more and break into fights. For teachers, the main challenge in these settings is to make everyone “accountable”—that is, responsible for a concrete task that they must do to complete the group activity. Deeper engagement is sacrificed for a more trivial kind, and quiet, independent thought has little place.

At my former school, I led lunchtime literature clubs for fourth- and fifth-graders. The fifth-grade group read *The Adventures of Huckleberry Finn*. One day, close to the end of the school year, we read the passage where Huck decides not to betray Jim. We discussed Huck’s confusion, which was still present even as he made the decision he knew was right. The discussion was slow, with pauses. At one point, the room fell into a long silence. One student said, “Ms. Senechal, you’re quiet today!” Another student



*By true curriculum, I mean a document, available to educators, students, and the broader community, that specifies the knowledge and skills that students must master, the subjects and topics they will study, and certain works (literary, historical, scientific, and other) that they will read closely. A curriculum can be specific to this degree and still leave much to the discretion of the school and the individual teachers. A curriculum is not a script; it specifies what will be taught, but not how it will be taught.

responded, “She’s thinking. There’s a lot to think about here.” I see her comment as a tribute to the book, not to my teaching, but I am proud that the students were able to appreciate the quiet in the room.

Teachers should not have to give up intellectual authority in the classroom; they should bring their knowledge, insight, and expertise to students. Socrates, lauded by 21st-century-skills proponents for teaching through inquiry, led such inquiry every step of the way. Peter W. Cookson, Jr., speculates that were Socrates alive today, he “would embrace the new learning era

with all the energy he had”;¹⁴ yet it seems more likely that he would regard it with deep skepticism. In Plato’s *Crito*, Socrates asks, “Should a man professionally engaged in physical training pay attention to the praise and blame and opinion of any man, or to those of one man only, namely a doctor or trainer?”¹⁵ To Socrates, not all opinions were equal, and they should not all be equal in the classroom today. The teacher should encourage students to think for themselves but should also prepare them to do so—through instruction, challenge, and correction. Students should have opportunities to discuss and test their ideas,

A Century of Skills Movements

BY DIANE RAVITCH

I am a historian of education and have written often about the educational enthusiasms and fads of the past century. One of my books, titled *Left Back*, tells the story of the rise and fall of one fad after another across the 20th century. In brief, what I’ve found is that in the land of American pedagogy, innovation is frequently confused with progress, and whatever is thought to be new is always embraced more readily than what is known to be true. Thus, pedagogues, policymakers, thought leaders, facilitators, and elected officials are rushing to get aboard the 21st-century-skills express train, lest they appear to be old-fashioned or traditional, these terms being the worst sort of opprobrium that can be hurled at any educator.

What these train riders don’t seem to realize is that there is nothing new in the proposals of the 21st-century-skills movement. The same ideas were iterated and reiterated by pedagogues throughout the 20th century. Their call for 20th-century skills sounds identical to the current effort to promote 21st-century skills. If there was one cause that animated the schools of education in the 20th century, it was the search for the ultimate breakthrough that would finally loosen the shackles of subject matter and content.

For decade after decade, pedagogical leaders called upon the schools to free themselves from tradition and subject

matter. Ellwood P. Cubberley, while dean of the education school at Stanford, warned that it was dangerous for society to educate boys—and even girls—without reference to vocational ends. Whatever they learned, he insisted, should be relevant to their future lives and work. He thought it foolish to saturate them with “a mass of knowledge that can have little application for the lives which most of them must inevitably lead.” They were sure to become disappointed and discontented, and who knew where all this discontent might lead?

Cubberley called on his fellow educators to abandon their antiquated academic ideals and instead to adapt education to the real life and real needs of their students. This was in 1911.

The federal government issued a major report on the education of black students in 1916. Its author, Thomas Jesse Jones, scoffed at academic education, which lacked relevance to the lives of these students and was certainly not adapted to their needs. Jones wanted black children to “learn to do by doing,” which was considered to be the modern, scientific approach to education. It was not knowledge of the printed page that black students needed, wrote Jones, but “knowledge of gardening, small farming, and the simple industries required in farming communities.” Jones admired schools that were teaching black students how to sew, cook, garden, milk cows, lay



bricks, harvest crops, and raise poultry. This was a prescription for locking the South’s African American population into menial roles for the foreseeable future. As Jones acknowledged in his report, the parents of black children wanted them to have an academic education, but he thought he knew better. His clarion call was sounded with extremely poor timing—just as America was changing from a rural to an urban nation.

Although there were many similar efforts to eliminate the academic curriculum and replace it with real-world interactions, none came as close to the ideals of 21st-century learning skills as William Heard Kilpatrick’s celebrated Project Method. Kilpatrick, a fabled Teachers College professor, took the education world by storm in 1918 with his proposal for the Project Method. Instead of a sequential curriculum laid out in advance,

Diane Ravitch is a research professor of education at New York University and a senior fellow at the Brookings Institution. She was the assistant secretary of education under President George H. W. Bush. Her latest book is The Death and Life of the Great American School System: How Testing and Choice Are Undermining Education.

but they should not be called experts before they actually are. They should be regarded as apprentices. One of the benefits of apprenticeship is that it allows for a long period of learning.

As an undergraduate at Yale, I had the good fortune of taking John Hollander's advanced poetry writing seminar. On the first day of the seminar, he established the guidelines for the course: First, this was not a free-for-all workshop where we would be commenting on each other's work. Second, he was not going to tell any of us whether we had the makings of a poet; it was far too soon to know. Third, class would revolve around the discussion

of specific problems, dilemmas, or principles in poetry. I remember how happy I was to hear all of this, to know that I was there to learn from him, not to impress. His lectures were great intellectual romps; I wish I could be in that classroom again. When asked to describe a favorite teacher, I often describe Hollander. He had a gift for going on seeming tangents, then bringing them back to his original point by surprise. As a student listening to him lecture, I was anything but passive. I was enthralled, full of thoughts and questions, and I would stay that way for days as I turned his words over in my mind.

Kilpatrick urged that boys and girls engage in hands-on projects of their own choosing. As Kilpatrick envisioned it, the project was "whole-hearted purposeful activity proceeding in a social environment." Kilpatrick said that the project shaped character and personality. It required activity, not docility. It awakened student motivation. Ideally, the project would be done collaboratively by a group.

Another forerunner to the 21st-century-skills movement was the activity movement of the 1920s and 1930s. As in the Project Method, students were encouraged to engage in activities and projects built on their interests. Studies were interdisciplinary, and academic subjects were called upon only when needed to solve a problem. Students built, measured, and figured things out, while solving real-life problems like how to build a playhouse or a pet park or a puppet theater. Decision making, critical thinking, cooperative group learning: all were integral parts of the activity movement.

Something similar happened in many high schools in the 1930s, where many avant-garde school districts replaced courses like science and history with interdisciplinary courses, which they called the "core curriculum" or "social living." Some districts merged several disciplines—such as English, social studies, and science—into a single course, which was focused not on subject matter but on students' life experiences. In a typical class, students studied their own homes, made maps and scale drawings, and analyzed such questions as the cost of maintaining the home; the cost of fuel, light, and power; and how to prepare nutritious meals.

But there were occasional parent protests. In Roslyn, New York, parents were incensed because their children couldn't read but spent an entire day baking nut bread. The Roslyn superintendent assured them that baking nut bread was an excellent way to learn mathematics.

In the 1950s came the Life Adjustment Movement, yet another stab at getting rid of subject matter and teaching students to prepare for real life. And in the 1980s, there was Outcome-Based Education, which sought to make schooling relevant, hands-on, and attuned to the alleged real interests and needs of young people.

The early 1990s brought SCANS—the Secretary's Commission on Achieving Necessary Skills—which recommended exactly the kinds of functional skills that are now called 21st-century skills. These documents were produced by a commission for the U.S. Secretary of Labor. I recall hearing the director of SCANS say that students didn't need to know anything about the Civil War or how to write a book report; these were obsolete kinds of knowledge and skills.

When the SCANS recommendations appeared in 1991, I was an assistant secretary at the U.S. Department of Education and I discussed them with David Kearns, the deputy secretary who had been CEO of Xerox. I said, "David, the SCANS report says that young people don't need to know how to write a book report, they need to know how to write advertising jingles." He replied, "That's ridiculous. You can't write advertising jingles if you don't know how to write a book report."

Each of these initiatives had an impact. They left American education with a deeply ingrained suspicion of academic studies and subject matter. "It's academic" came to mean "it's purely theoretical and unreal." For the past century, our schools of education have obsessed over critical-thinking skills, projects, cooperative learning, experiential learning, and so on. But they have paid precious little attention to the disciplinary knowledge that young people need to make sense of the world.

One of the problems with skills-driven approaches to learning is that

there are so many things we need to know that cannot be learned through hands-on experiences. The educated person learns not only from his or her own experience, but from the hard-earned experience of others. We do not restart the world anew in each generation. We stand on the shoulders of those who have gone before us. What matters most in the use of our brains is our capacity to make generalizations, to see beyond our own immediate experience. The intelligent person, the one who truly is a practitioner of critical thinking, has the learned capacity to understand the lessons of history, to engage in the adventures of literature, to grasp the inner logic of science and mathematics, and to realize the meaning of philosophical debates by studying them. Through literature, for example, we have the opportunity to see the world through the eyes of other people, to walk in their shoes, to experience life as it was lived in another century and another culture, to live vicariously beyond the bounds of our own time and family and place. What a gift! How sad to refuse it. □



Just as we should preserve the best of traditional teaching, we should preserve the best of traditional content. We may argue about what should be included in a curriculum, but we should not avoid curriculum. We should make sure that young people leave school informed of the past so that they do not get swept up in the rages of the present. We should keep our lives and culture resonant by studying excellent literature, philosophy, historical thought, science, mathematics, and art—by reading poetry aloud, singing, and returning to books we read long ago. We should expect students to memorize poems, monologues, and parts of speeches; to read classic novels and essays; to discuss and analyze what they have read; and to write with clarity and verve. Much of this activity is solitary and requires quiet. In mathematics, they should learn to calculate nimbly so that the more advanced topics do not daunt them, and each topic should be taught in as much depth and with as much precision as possible. Students should read primary and secondary texts in history; they should learn enough facts to describe and explain historical events, discuss historical questions, and conduct research fruitfully. And there should be electives, including rigorous vocational training, in addition to the core studies.

But how are we to accomplish this? The first step is to combat the excessive careerism and pragmatism in educational discussion—to remind ourselves and each other that schools are here not only to serve immediate practical purposes, but to teach things that last a lifetime and merit passing on to future generations. The second is to insist on a superb curriculum, with the best of the old and the best of the new, from the earliest grades on up. The curriculum should be the soul of a school; it should abound with works and topics that fill the mind and deepen one's outlook on life. It should be both fixed and changing: stable enough that teachers need not rewrite it from scratch every year, yet flexible enough that they may supplement it daily, revise it over time, and

teach it in the way that they judge best. We must also call for greater emphasis on liberal arts in teacher preparation, so that teachers entering the classroom are fully prepared to teach their subject, and so that the field of education may be enriched by intellectual knowledge and traditions. Many questions remain unresolved, and new ones will arise, but this is a strong beginning.

Certainly, schools should use some projects (as most already do) and some technology (as most already do). When they do, it should suit the situation, and teachers should use their discretion. A Shakespeare course, for instance, need not be infused with 21st-century anything whatsoever. Some teachers teach mesmerizing Shakespeare courses with nothing but the book. Others might supplement readings and discussions with pic-

We may argue about what should be included in a curriculum, but we should not avoid curriculum. We should keep our lives and culture resonant by studying excellent literature, philosophy, historical thought, science, mathematics, and art—by reading poetry aloud, singing, and returning to books we read long ago.

tures and recordings; circumstances permitting, they might take students to see a Shakespeare play or have them act out selected scenes in the classroom. But whatever they decide to add, it must further students' understanding of Shakespeare. Twitter, Facebook, and texting add nothing to Shakespeare; they are only distractions. On the other hand, technology as a subject is not a distraction; some high schools have developed terrific computer programming, robotics, and sound engineering courses and afterschool clubs. In such cases, students learn how to make technology do what they want, and they learn the science and logic behind it. They learn much more about technology this way than they would by blogging and texting—activities they likely pursue on their own.

If teachers can focus on teaching their subjects, then they can go deeper. Creativity, problem solving, communication, and critical thinking make sense only in the context of specific studies.

Creativity and innovation, for example, require much knowledge and practice. When we take them too lightly, we encourage and even celebrate shoddiness. Mediocre creation abounds, as does false innovation, and it is not clear that this helps either the creator or the audience. Once, I attended a professional development session where we were told about the power of the Internet as a motivator for students. The speaker cited the example of a student who, as a result of a blogging project, had become excited about poetry and started posting her own poems on the school blog. I took a look at the poems that evening, Googled a few lines, and saw that all but one were plagiarized—not from first-rate poets, but from websites that featured sentimental and inspirational verse. Why was this not caught earlier? Anyone paying close attention to the poems themselves would likely have suspected that they weren't hers (the language was an adult's, and hack-



neyed at that). The presenters were genuinely excited that the Internet had motivated a student to write; perhaps they chose not to judge the poems lest they interfere with her creative process. This is the danger: when we value creativity (and technology) above the actual quality of the things created, we lose sight of what we are doing and why.

Proponents of 21st-century skills often treat innovation as though it can be taught on its own—yet our most celebrated innovators did not make discoveries in a void. Benjamin Franklin studied the writing of Joseph Addison in order to arrive at his own style. Albert Einstein read Euclid's *Elements* at age 12 and called it the "holy little geometry book." Aaron Copland praised his composition teacher, Rubin Goldmark, for bringing forth a generation of composers through rigorous traditional instruction.¹⁶ Even our democratic system of government was influenced by ancient democracies and by the British parliamentary system; its founders were well versed in history and philosophy. This is not to say that the study of the past guarantees innovation, only that innovation cannot do without it. To say we should teach innovation is really to say we need a strong liberal arts curriculum, which will supply the foundation for innovation.

Problem solving, when taken out of context, means just as little as creativity or innovation. To solve problems well, students must understand the problem to be solved, have the necessary information for solving it, and know solutions to similar problems. To translate a literary work, one needs not only knowledge of the source and target languages, but a keen sense of the nuances of words, the rhythms of phrases, the author's tone, and much more. In mathematics, one problem leads to the next; someone familiar with the Pythagorean theorem will grasp its corollaries with much more ease than one who has never seen it. Even listening to music is a kind of problem solving; we need musical knowledge in order to find our way through the sounds, to recognize allusions, and to grasp how the composer plays with forms.

Communication is likewise dependent on knowledge and practice. To communicate well, students must have something to say and models for saying it well. We do nothing to elevate the level of communication by having them read and write blogs, watch and make videos, and send text messages and tweets during English and history classes. Students know how to use the equipment, but their writing ability remains deplorably weak, forcing colleges to offer remedial writing courses and to assist students with basic writing throughout their undergraduate years. To write well, students must read excellent writing, and they must study subjects in depth and detail. Students learn much more about communication through the study of logic, philosophy, history, and literature than through immersion in social networks, online chatter, and other media already familiar to them. To learn the basics of argument and fallacy, students might read Corbett and Connors' *Classical Rhetoric for the Modern Student*, Strunk and White's *Elements of Style*, and George Orwell's "Politics and the English Language." As they read Shakespeare, they might consider how words can be twisted by listener and speaker alike—by Macbeth and the witches, by Lear and the Fool. In works with a political allegory, such as Orwell's *Animal Farm* and *1984*, they might look at how language is used to control people and distort the truth. They may also observe the nobler uses of language—for instance, to bring about good, preserve cultural memory, and



promote understanding—as well as the playful, fantastical, and musical aspects of language. Any history or literature course should involve close study of the meanings, origins, pitfalls, power, and delight of words.

Through such study, students not only come to a deeper understanding of language, but begin to see their problems and needs in perspective. They learn that humans can communicate not only in "real time" but across cultures and centuries. If they read the *Iliad*, they will see Hector's tenderness toward his wife and son when he explains why he must go to war; they will see Achilles' ambivalence about entering battle, his knowledge of his "two fates"; they will see complex humans in a strange and brutal war. Students learn to appreciate both the familiar and unfamiliar; literature does much more than illuminate their lives, though it does this amply. Students learn that people throughout the ages have experienced joys, losses, jealousies, and triumphs. Young teens flummoxed by fleeting attractions may enjoy the vicissitudes of *A Midsummer Night's Dream* or Gogol's short stories. Those feeling sadness may find company in a Tennyson poem; those experiencing tumult may revel in Baudelaire; those critical of social trends may delight in the essays of Chesterton; those thirsting for justice may be inspired by the writings of Martin Luther King, Jr. But such literature does not stop at meeting our needs; it takes us beyond what we have felt and known. Education philosopher Michael John Demiashkevich wrote, "Now, would it not be good if instead of a whirl to the next town which may leave one as empty if not more so than he was before taking it, people developed liking for recreational excursion into literature which, in the words of Sir Walter Raleigh, 'is the record of man's adventures on the edge of things.'"¹⁷

Perhaps critical thinking—thinking on the edge of things—is the trickiest of all the 21st-century skills. If we want to encourage and teach critical thinking, we should practice it ourselves. This means that we should beware of comprehensive solutions, sweeping reforms, catch phrases, and fads. Instead, we should closely study curricula and instructional approaches of the past, to find

the best in them, learn from them, and build on them where possible. We could look at 19th-century textbooks (such as John S. Hart's grammar books or the McGuffey Readers) to see what insights they hold. We could seek ways to combine disciplined practice with inspiring lessons, projects, and discussions. We could seek out the best textbooks—not necessarily those that dominate the market—and supplement them with an array of primary and secondary sources, especially since so many important primary sources—many dating back centuries—are now online. We could hold professional development sessions on academic topics themselves. We could look at inspiring examples of other teachers and schools; we could take our own education to new levels, whether through formal coursework or independent study. The point is to act with full mind and conscience, to make the learning rich and thorough, and to keep an eye out for substance, beauty, and meaning.

We will never reach perfection, but the more we strive for it, learning from history as well as experience, the closer we will come. To make changes thoughtfully—to keep the layers of past and present in everything we do—may be the most daring education reform of all.

When the frenzy over 21st-century skills passes—and it will—students will see that their opportunities depend largely on their knowledge. Many will graduate with blogging experience, but those who can write a strong essay on a Supreme Court case will be better prepared to enter the fields of history, law, or journalism. Many will have online science portfolios, but those who have studied calculus, have read parts of Newton's *Principia*, and can prove Kepler's second law (for example) will be much better prepared to study physics at an advanced level. Many will have written acrostic poems, but those who have studied sonnets closely will be familiar with a kind of poetic logic that they can carry into their life, work, and writing. Many will have communicated with peers around the world in English, but those who study a modern or ancient language will gain deeper insight into other cultures as well as their own. The ability to make a YouTube video or podcast will mean little in the long run if the other things are absent. Moreover, those technologies may be obsolete in another few years, but literature, science, languages, mathematics, history, music, art, and drama will stay.

Our schools are in need of repair—but we will not improve them by scorning tradition or succumbing to the “claims of the present.” We will never reach perfection, but the more we strive for it, learning from history as well as experience, the closer we

will come. We must be willing to seek out excellence, nurture it, defend it, and live up to it. We must be willing to lift the levels of the subjects we teach, the books we include, the assignments and corrections we give, and the way we conduct ourselves daily. Lifting the levels does not mean racing to catch up with a movement's demands; it means standing back from the race, focusing on what it means to educate in the full sense, and honoring this understanding in all of our work. To make changes thoughtfully—to keep the layers of past and present in everything we do—may be the most daring education reform of all. □

Endnotes

1. John Dewey, *The School and Society: Being Three Lectures* (Chicago: University of Chicago Press, 1900), 25, 48.
2. Partnership for 21st Century Skills, *21st Century Skills, Education and Competitiveness: A Resource and Policy Guide* (Tucson, AZ: Partnership for 21st Century Skills, 2008), www.21stcenturyskills.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf.
3. Craig D. Jerald, *Defining a 21st Century Education* (Center for Public Education, 2009); and Tony Wagner, *The Global Achievement Gap: Why Even Our Best Schools Don't Teach the New Survival Skills Our Children Need—and What We Can Do About It* (New York: Basic Books, 2008), 246.
4. See, for example, Partnership for 21st Century Skills, *21st Century Skills Map: English* (Tucson, AZ: Partnership for 21st Century Skills, 2008), www.21stcenturyskills.org/documents/21st_century_skills_english_map.pdf; and Partnership for 21st Century Skills, *21st Century Skills Map: Social Studies* (Tucson, AZ: Partnership for 21st Century Skills, 2008), www.21stcenturyskills.org/documents/ss_map_11_12_08.pdf.
5. Diane Ravitch, “21st Century Skills: An Old Familiar Song” (speech, Common Core, February 24, 2009), www.commoncore.org/pressrelease-05.php; see also Diane Ravitch, *Left Back: A Century of Battles Over School Reform* (New York: Simon and Schuster, 2001).
6. John Dewey, “The Primary-Education Fetish,” *The Forum* 25 (March–August 1898): 315–328.
7. Daniel T. Willingham, “How Knowledge Helps: It Speeds and Strengthens Reading Comprehension, Learning—and Thinking,” *American Educator* 30, no. 1 (Spring 2006), www.aft.org/newspubs/periodicals/ae/issues.cfm; and Daniel T. Willingham, “Critical Thinking: Why Is It So Hard to Teach?” *American Educator* 31, no. 2 (Summer 2007), www.aft.org/newspubs/periodicals/ae/issues.cfm.
8. George Lucas Educational Foundation, *Media Smarts: Kids Learn How to Navigate the Multimedia World* (San Rafael, CA: George Lucas Educational Fund, July 13, 2005), www.edutopia.org/media-literacy-skills-video.
9. Isaac Leon Kandel, *The Cult of Uncertainty* (New York: Macmillan, 1943), 17.
10. E. D. Hirsch, Jr., *The Making of Americans: Democracy and Our Schools* (New Haven, CT: Yale University Press, 2009), 5.
11. Conference Board, Partnership for 21st Century Skills, Corporate Voices for Working Families, and Society for Human Resource Management, *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce* (New York: Conference Board et al., 2006), 21.
12. Learning Matters, *Race to the Top: Podcast—Play Money* (New York: Learning Matters, December 3, 2009), learningmatters.tv/blog/podcasts/race-to-the-top-podcast-play-money/3428.
13. William Torrey Harris, “The Relation of School Discipline to Moral Education,” in *Forgotten Heroes of American Education: The Great Tradition of Teaching Teachers*, ed. J. Wesley Null and Diane Ravitch (Greenwich, CT: Information Age, 2006), 358.
14. Peter W. Cookson, Jr., “What Would Socrates Say?” *Educational Leadership* 67, no. 1 (September 2009): 8–14.
15. Plato, “Crito,” in *Five Dialogues: Euthyphro, Apology, Crito, Meno, Phaedo*, trans. G. M. A. Grube (Indianapolis: Hackett, 2002), 49.
16. Benjamin Franklin, *Autobiography of Benjamin Franklin* (New York: Henry Holt, 1916), 25–27; Stephen Hawking, *A Stubbornly Persistent Illusion: The Essential Scientific Works of Albert Einstein* (Philadelphia: Running Press, 2007), 337; and Aaron Copland, “Rubin Goldmark: A Tribute,” *Juilliard Review* 3, no. 3 (Fall 1956): 15–16.
17. Michael J. Demiashkevich, *The Activity School: New Tendencies in Educational Method in Western Europe* (New York: Little and Ives, 1926), 139.

