

THE GREAT
CURRICULUM
DEBATE

HOW SHOULD WE TEACH
READING AND MATH?

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Editor

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Introduction

TOM LOVELESS

For the American school curriculum, the twentieth century ended like it began, with an intense debate over what schools should teach and how they should teach it. In 1902 John Dewey, who would eventually become the twentieth century's most famous advocate of school reform, wrote about two "sects" fighting over the curriculum. One group sought to "subdivide each topic into studies; each study into lessons; each lesson into specific facts and formulae. Let the child proceed step by step to master each one of these separate parts, and at last he will have covered the entire ground." The other camp, observed Dewey, believed "the child is the starting point, the center, and the end." Because this view focused so intently on the child, Dewey concluded, "It is he and not the subject-matter which determines both the quality and quantity of learning." A student-centered approach required a particular type of pedagogy, Dewey noted with approval, a teaching style recognizing that "learning is active."

Dewey's observations could have been written in 1999. Nearly a century had passed, but neither side had surrendered. Cease-fires had been fleeting. Decade after decade the conflict that Dewey had observed—and later became an important participant in himself—kept recurring. The terms *education progressive* and *education traditionalist* arose as labels for its partisans, who usually kept their squabbles within the walls of the nation's schools of education. Occasionally, however, the disagreement burst into

the headlines, captured the nation's attention, and reminded everyone of the bitterness and rancor in which the politics of education is steeped.

At the end of the century, the debate focused on reading and math. This book is about the public conflict that swirled around these two subjects in the 1990s. The "education sects" that Dewey described so long ago still existed—in reading, in the proponents of "whole language" and "phonics," and in math, in the advocates and opponents of "NCTM math reform," referring to the reform agenda of the National Council of Teachers of Mathematics. The book includes contributions from influential scholars on both sides of the disputes, as well as chapters by distinguished nonpartisans. It examines what fueled the controversies, clarifies adversarial positions, analyzes the politics of the disputes, and investigates how curricular conflicts may have affected policy and practice.

In October 1999 the Program on Education Policy and Governance (PEPG) at Harvard University invited leading scholars to a two-day conference on the math and reading controversies. The meeting was held at the Charles Hotel in Cambridge, Massachusetts, and was jointly sponsored by the John M. Olin Foundation and the Kennedy School of Government's A. Alfred Taubman Center for State and Local Government. A crowd of nearly 100 participants and observers attended.

The papers presented at the conference make up the chapters of this book. They are organized by subject—first math, then reading—and prefaced with an essay by E. D. Hirsch Jr. At the conference, a welcoming dinner was held, with Hirsch as guest speaker. Although Hirsch clearly takes sides in these debates, his remarks offer a philosophical starting place for appreciating all the views expressed in the book. Whether you agree or disagree with Hirsch—or any of the other authors presented here—I think you will see that they agree on one point. The school curriculum is important. What we decide to be the proper content of schooling has significant consequences, not only for today's students and schools, but for tomorrow's society as well.

In the opening chapter, Hirsch argues that the reading and math wars are rooted in an age-old conflict between romantic (progressive) and classical (traditional) orientations toward education. The classical orientation believes in explicit, agreed-upon academic goals for children; a strong focus on discipline and order in the classroom; the primacy of teacher-led instruction; and regular testing to assess student performance. Traditionalists are skeptical that children naturally discover knowledge or will come to know much at all if left to their own devices. Traditionalists are confi-

dent that evidence, analysis, and rational thought are greater assets in the quest for knowledge and virtue than human intuition and emotions.

The romantic tradition reveres nature and natural learning. Instead of establishing explicit academic goals for children, educational progressives value a multitude of learning outcomes. They are more likely to insist on particular instructional approaches for teachers and particular characteristics of the learning environment than on the exact learning to occur, largely because of faith that, in the right setting, the proper learning for each child will unfold. These beliefs are religious, that is, they are based on faith rather than empirical tests of what is true. As Hirsch puts it, “We know in advance, in our bones, that what is natural must be better than what is artificial” and “our natural impulses work providentially for good in ways beyond our comprehending.” Standards, rules, hierarchies of skill, rote practice and memorization, and the curriculum are all artificial constructions of culture and society.

Gail Burrill begins the book’s math chapters with a call for overhauling an outmoded curriculum. The curriculum reflects its historical time. Burrill argues that progressive reform is essential in mathematics because of the rapid changes in today’s society and the future demands that students will face from technological innovations. She points out that the math curriculum is largely an invention of the early twentieth century, when most students completed only eighth grade and advanced courses such as algebra, geometry, and calculus were reserved for the few students who went to college. The NCTM’s landmark 1989 document, *Curriculum and Evaluation Standards for School Mathematics*, offers an agenda for reform that Burrill enthusiastically supports. Three critical aspects of math instruction are altered: a shift in content from learning skills and procedures to using math for problem solving, a shift in teaching from disseminating information to stimulating student thinking and inquiry, and a shift in assessment from serving as end-of-the-unit tests to assisting teachers in diagnosing and addressing students’ strengths and weaknesses.

Much of the NCTM blueprint is grounded on a progressive theory of teaching and learning known as constructivism. Michael T. Battista argues that scientific research supports constructivist approaches over traditional ways of teaching math. A narrow focus on computation may produce students who are able to come up with the right answers but are unable to explain why the answers are correct or to discern the appropriate calculations to arrive at them. Stressing memorization and imitation over understanding, thinking, and reasoning renders students’ knowledge of

mathematics impersonal and shallow. Battista quotes students defending incorrect answers. They possess a blind confidence in the results of procedure, even if the procedures are incorrect and the answers inconsistent with intuition, logic, or concrete reality.

Battista draws a distinction between a simplistic view of constructivism as “discovery” learning, teaching with manipulatives or other nonrigorous forms of teaching that allow students to do whatever they want, and the sophisticated theory and empirical evidence supporting what he calls “scientific constructivism.” Math learning occurs as students cycle through phases of action, reflection, and abstraction that allow them to build ever more sophisticated mental models of mathematics. These models are tied to real-world quantities and rooted in interactions with, and the need to explain, one’s environment. Battista cites several studies, including one of his own, in which students in constructivist-oriented classrooms improved on achievement tests measuring conceptual understanding or problem-solving skills without a loss in computational ability. Failed math reform programs, Battista concludes, are due to flawed mechanisms for converting theory into practice—teacher training, textbook creation, and teaching—not flaws in the theory of constructivism or the body of research supporting it.

David C. Geary argues that constructivism is theoretically suspect in light of the evolutionary history of the brain. Are human beings hardwired to learn math? Children almost certainly have an inherent sense of numbers, counting, and simple addition and subtraction, competencies that are found in preindustrial cultures and even in limited form among chimpanzees and other primates. Like language, these competencies seem to develop from an innate capacity that is elaborated through a child’s natural activities, especially social play. This evolved capacity lays the foundation for children grasping simple arithmetic.

But innate mechanisms are not sufficient to lead children to most of the mathematics taught through formal schooling. Learning how the base-10 system operates, for example, is more difficult than learning rudimentary number-counting skills, just as learning how to read and write is more difficult than learning the language of one’s parents. Children are not inherently motivated to study math, Geary argues, which makes the value that the larger society and culture place on academic pursuits, along with a teacher’s ability to organize and guide instruction, all the more crucial. Instructional practices that are predicated on children’s natural instincts, such as constructivism, are doomed to fail a large proportion of children, Geary concludes.

Do we know anything about how these theories play out in classrooms? Roger Shouse examines data from the National Education Longitudinal Study (NELS:88) and explores whether practices similar to math reformers' recommendations succeed in raising student achievement. He reports several surprising findings. The first is that, in 1990, 62 percent of tenth graders said that their math teachers asked them to "really understand the material, rather than just give an answer" and 77 percent said they were "really challenged" in the subject. Both figures are higher than those from any other academic subject, contradicting the notion that in 1990, about the time of the release of the NCTM standards, rote learning and "drill and kill" methods dominated math instruction.

Does math reform work? In eighth grade the effect of practices usually endorsed by math reformers is a mixed bag. Many practices have a different effect on achievement in schools serving advantaged and disadvantaged populations. Reformers frequently recommend grouping students heterogeneously by ability, for example. But students in detracked, mixed-ability classes evidence lower math achievement, and the negative effect is especially pronounced for students in disadvantaged schools. The effect of calculator use is significantly negative in disadvantaged schools but slightly positive elsewhere. An emphasis on algebra and problem solving boosts achievement in all types of schools.

Shouse also looks at the tenth grade, where some traditional practices are shown to be effective. Achievement gains are associated with learning facts, rules, and problem-solving skills but not from the use of hands-on activities. Textbooks and daily review are helpful, but student discussions are not. Achievement falls when teachers stress "the importance of math in everyday life." Other findings favor reform. Calculators seem to raise achievement, even though computers do not. Negative effects were detected for an emphasis on "speedy computations," a finding any reformer would applaud, and an emphasis on "students' questions about math" and "math concepts" produced positive results.

Adam Gamoran argues that the conflict over the math curriculum poses a false dichotomy between rigorous content and in-depth understanding. Taking the position that they are both desirable, he reviews several studies to show that they are both present in successful math classes. He first details studies by James Stigler of UCLA comparing Japanese and American teachers' instructional styles. The studies suggest that Japanese students' superior math achievement may be due to instructional practice. Japanese math teachers typically present a problem, discuss alternative

solutions generated by students, present a general formula, and then provide time for students to apply the formula while working on problems on their own. American teachers, on the other hand, typically demonstrate how a formula works, then assign practice problems for students to complete. Gamoran argues that the Japanese approach demands content mastery from students while encouraging deeper exploration of the material and allowing students the time to think.

Gamoran describes an American program, Modeling in Mathematics and Science Collaborative, which exhibits many of the Japanese education traits and shows promising results on achievement tests. He reviews the favorable findings of a study by Fred Newmann and colleagues of authentic pedagogy—instructional techniques that combine constructivist principles with the mastery of disciplinary content. He also describes a study of transition courses, where math classes featuring a hands-on, problem-solving curriculum are offered as an alternative to general math classes for students not yet ready for advanced mathematics. These studies suggest that progressive instructional strategies can be effective if directed toward the learning of serious content.

Richard Askey declares his stand in his chapter title: good intentions are not enough. Askey agrees that NCTM reformers are seeking to improve mathematics in schools, but he identifies several flaws in their approach. The NCTM standards do not address the problem that Askey considers the most critical in math reform: the lack of classroom teachers' firm content knowledge. The NCTM also did not examine the math curriculum of other countries or include mathematicians in the writing of the standards.

Askey points out that teaching mathematics well using indirect strategies, methods favored by the NCTM, means that teachers must possess a deeper understanding of the subject than has been expected in the past. Today's elementary grade math texts are written with the awareness that teachers using the books may know little math. Not only do the new reform-oriented texts, which were financed by the National Science Foundation, lack sufficient guidance for teachers, Askey cites several instances where the books also are misleading or promulgate bad mathematics. Including professional mathematicians on editorial boards, not to mention in standards-writing efforts, would help catch such errors. Moreover, the NCTM's stated goal that conceptual understanding should be emphasized over skill development leads texts to spend an unwarranted amount of time on shallow concepts. Only math teachers with a profound under-

standing of their subject, with the kind of proficiency depicted in Liping Ma's *Knowing and Teaching Elementary Mathematics*, will be able to overcome these flaws in the NCTM standards and serve students well.

I am the author of the final math chapter. In it I compare the politics of the NCTM reforms with the politics of the "New Math" in the 1950s and 1960s. Both movements sprang from policy subsystems—influential networks of experts on a particular subject. The math subsystems were powerful enough to convert a reform agenda into adopted policy. Both reforms benefited from focusing events, defining moments that moved public opinion to support changes in school mathematics. For both reforms, after changes in the math curriculum had been implemented in classrooms, strong opposition arose to the new content of mathematics. In the case of the New Math, the criticism proved to be fatal, as it was routed from classrooms in the late 1960s and early 1970s. Although the fate of the NCTM reforms must still unfold, the analysis sheds light on how their popularity changed in the 1990s, from being the universally recognized model for curriculum standards at the beginning of the decade to the subject of ferocious debate at decade's end.

Diane Ravitch begins the book's reading chapters by showing that the debate on how to teach reading extends back to the nineteenth century. The methods of instruction that have dominated are the alphabet method, in which students memorize the letters of the alphabet; phonics, which makes students learn the sounds of letters and combinations of letters; and the holistic methods, in which students learn entire words and sentences, preferably as naturally as possible and without extensive skill instruction.

Three themes run through Ravitch's account. One is that reading instruction premised on some form of phonetic analysis stubbornly resists reformers' efforts to quash it. Another involves children's happiness. As early as the mid-1800s, critics complained of children being taught how to read through laborious drills that focused on memorizing the relationship of sounds and letters—that all students were really learning was to associate reading with drudgery rather than joy. By the Progressive Era of the early twentieth century, John Dewey and other reformers argued that reading instruction should be delayed until age eight to prevent damage to children's nervous systems. In the 1980s "whole language" advocates lodged similar charges against phonics, claiming that it handicaps reading comprehension and produces a lifelong aversion to reading.

The third theme pertains to meaning. Supporters of phonics believe that reading for meaning must be temporarily subordinated to the analy-

sis of abstract symbols, specifically, learning how printed letters and words can be converted into audible sounds and words. Once beginning readers acquire these skills, they are able to decode unfamiliar words and then to understand complete words, sentences, paragraphs, and stories. The opposing, progressive view is evident in the “whole word” method of the 1930s, also known as “look-say” because students were trained to look at a word and then say it. Progressives recognized that text is immediately recognizable to fluent readers, but they saw words—not letters or clusters of letters—as the smallest possible unit of learning for nonreaders. Words have meaning; parts of words do not. They thought once an extensive list of words had been learned and were recognizable on sight, beginning readers could then figure out unknown words by their context.

Ravitch shows how phonetic-based instruction has persevered, despite progressives’ insistence that it makes children dislike reading, that learning how to read should be anchored in the search for meaning, and that instruction on “the whole” excels over instruction on “the part.” She argues that the best elements of both approaches are supported by research and that the two sides should compromise, “declare victory and go home.”

Important efforts at compromise occurred in the 1990s. Catherine E. Snow writes about the *Report on Preventing Reading Difficulties in Young Children*, issued by the National Research Council (NRC). Snow chaired the committee that issued this influential 1998 report, heralded by many as staking out common ground on which phonics and whole language supporters could agree. Snow points out that reading research had converged on several points, making the time ripe for compromise, and the committee’s charge to focus on preventing reading difficulties also heightened its chances for gaining consensus.

Snow believes the English language’s bidirectional complexity—in converting printed spelling to sounds and sounds to spelling—fueled the reading wars. Phonics supporters stress systematic, sequential instruction in how to make these conversions. Successfully converting letters (or graphemes) into sounds (or phonemes) is the defining task of phonemic awareness. Whole language supporters emphasize that decoding text is merely a means to an end and that reading is about constructing meaning from text. The NRC report embraced the principles supporting both positions.

It drew criticism from both sides. Some phonics supporters felt the report did not go far enough in identifying the most reliable research on the topic. They also disagreed with the report’s endorsement of invented spelling and its wading into the debate over bilingual education by insisting that

reading instruction first occur in a learner's primary language. Some whole language supporters felt the report neglected the social inequities that hinder literacy, adopted an alarmist tone by focusing on reading difficulties, and subordinated research based on classroom experiences to positivist, quantitative studies. Snow's chapter illustrates the difficulty of resolving these issues within the context of long-standing curriculum disputes.

Margaret Moustafa is sympathetic to the whole language position. She observes that the phonics–whole language debate is often misconstrued as a debate about *whether* letter-sound relationships should be taught. In fact, Moustafa argues, it is about *how* they should be taught. Phonics-based approaches, which she calls “traditional” reading instruction, teaches letter-sound correspondences and print words out of context, then provides children with materials featuring the words that have been taught. In the reading instruction that she favors, referred to as “contemporary” instruction, children are taught letter-sound relationships and new words while encountering them in text. One key difference is that reading skills are not acquired in isolation. Another is that decodable text takes a back seat to content in selecting children's reading materials. The parts-to-whole orientation of traditional instruction is reversed, as children are taught to read text with familiar language via shared reading, followed by letter-sound correspondences in the context of stories with predictable text. Thus reading is presented as a meaningful act even in the initial stages of learning.

Moustafa reviews several studies supporting contemporary reading instruction, focusing primarily on the superiority of teaching reading for meaning. She also argues that those who emphasize phonemic awareness as a prerequisite for reading probably have the direction of causality wrong. Good readers are phonemically aware, Moustafa agrees, but this skill can be acquired after—not necessarily before—one learns to read. She concludes that recent policy swings toward traditional reading instruction are not supported by research but have been propelled instead by misinterpretations of trends in National Assessment of Educational Progress (NAEP) reading scores and the misuse of several studies' findings.

Richard Allington writes about the effect of literacy policy on classroom practice. Like Moustafa, he traces the impetus for policies targeting reading instruction to the establishment of NAEP performance levels, which began in 1990, and to several research reports in the early 1990s. The NAEP scores indicated that large numbers of students were reading below a “basic” level, which alarmed the public. The research reports

were on a variety of topics in reading but were alike in suggesting that certain approaches to instruction had been “proven” effective. As the belief spread that curriculum developers were ignoring scientific findings even as reading proficiency languished, the regulation of reading became a top priority of policymakers. In the 1990s more than 100 bills regulating aspects of reading instruction were introduced in state legislatures.

Allington argues that all this policymaking will have little effect on teaching. He points to past efforts at regulating instruction and the consistent finding of research that teachers are impervious to policy mandates. He also points out the inherent difficulties of implementing curricular reform—the time lag, for instance, between when policy is adopted and new materials actually appear in classrooms—and recommends high-quality longitudinal studies that examine the fidelity of implementation as part of program evaluation.

William Boyd and Douglas Mitchell start by acknowledging that the fight over reading is yet another skirmish in the philosophical dispute between progressive and traditional education. But they also think the 1990s debate was exacerbated by macroeconomic trends, especially public anxiety concerning globalization. This drove utilitarian concerns about U.S. competitiveness and school performance and ultimately spurred the centralization of power in social institutions during the decade. Control over the curriculum was no exception, with state and federal officials assuming greater say over reading instruction. The decade’s “reading wars” featured three groups of important actors—education professionals, politicians and policymakers, and public and private interest groups (including parents)—and Boyd and Mitchell describe several “battlefronts” along which the reading wars were fought.

Boyd and Mitchell use this conceptual scheme to explain the rise and fall of whole language in California. Whole language reached its zenith in the state’s 1987 English-language arts framework. Although the term *whole language* was never mentioned, several of the framework’s key ideas were inspired by whole language—literature-based texts, student-centered instruction, multiculturalism, cooperative learning, and open-ended assessments soliciting student-constructed responses. These themes were placed on the defensive by stresses from globalization, Boyd and Mitchell argue, as the authority of professional educators was diminished by scientists, government officials, and public demand.

As a conclusion to this introduction, I offer five generalizations on the math and reading controversies of the 1990s.

1. The disagreement in math was largely about *what* math should be taught. In reading, it was primarily about *how* reading should be taught. Consequently, the math chapters deal primarily with content and the reading chapters with pedagogy.

2. In terms of policies, opposite philosophies were ascendant in mathematics and reading during the decade. The progressive-oriented NCTM reforms served as the model for most states as they wrote curriculum standards in mathematics. The federal Reading Excellence Act, on the other hand, embraced phonics-based instruction as the only scientifically valid form of teaching reading; this conclusion was backed by studies of the National Institute of Child Health and Human Development, a branch of the National Institutes of Health.

3. The stakes of the debate were ratcheting higher in the 1990s. States and local districts adopted standards defining what students should learn and tied the standards to periodic assessments and accountability plans. Consequently, progressive and traditional educators hauled their disagreements out of the cloistered halls of academia and thrust them before the public, into the hearing rooms of Congress and state legislatures, and onto television and other mass media.

4. Educational ideologies and conventional political ideologies are not a perfect match. The stereotypes are basically correct. Political conservatives tend to favor the traditionalist positions and liberals the progressive views. But not always. E. D. Hirsch Jr. and David Klein, for example, lean toward the left politically but back the traditionalist cause on curriculum. Conservative business groups often trumpet the virtues of cooperative learning; education's "soft skills," such as teamwork; and math reform in line with the NCTM standards—stock tenets of progressive reform.

5. Calls for compromise and a balanced approach are attractive but frequently break down when implemented in classrooms. Teachers are constrained by limited time and resources. When something has to give—and the sacrifice involves phonics or arithmetic or problem solving—those who favor the abandoned content are invariably offended. In addition, the side in political ascendancy is prone to declare that a balanced approach has been achieved. Thus critics of NCTM and the advocates of whole language were less likely to be enthralled with the balanced approaches touted by policymakers at the end of the decade.

The passion with which the following chapters argue, analyze, indict, and defend, and their willingness to describe how things are and how they should be, underscores an important point. Reading and mathematics are the two most important school subjects. Debating how they should be taught reveals our deepest convictions on what constitutes a good education.

The Roots of the Education Wars

E. D. HIRSCH JR.

It is an honor to begin this volume's discussion of the great Curriculum debate. At the conference I was listed as an English professor, which is a correct description of my former life and a reminder that I was being asked to discuss technical subjects to specialists in those subjects. While it is no secret that I have taken sides in this argument, my focus here is on the intellectual roots of the education wars. I started my professional life as an intellectual historian. I wrote two books about Romanticism, which was the movement that started these wars. Here I present one intellectual historian's take on those origins and proffer an explanation of the remarkable durability of Romantic educational ideas even in the face of practical failures.

An intellectual historian is an attenuated sort of historian. To get substantive educational history you go to scholars like Diane Ravitch. An intellectual historian focuses on the connections of ideas in order to understand why people hold them—often with the purpose of enabling people to liberate themselves. The great progenitor of intellectual history in the United States was A. O. Lovejoy of the Johns Hopkins University, who followed German scholars in subordinating historical influence to what the Germans called *Seelenlogik*, the logic of the soul. Ideas that may not fit together with logical consistency may nonetheless cohere emotionally. Intellectual history is a way of understanding how ideas hang together. It is an especially valuable discipline for escaping the prison house of ideology.

What does intellectual history have to say about the reading and math wars? The two sides, viewed broadly, are expressions of Romantic versus Classic orientations to education. (I will use the adjectives “Romantic” and “progressive” interchangeably for reasons that will become clear.) The whole-language approach to reading is Romantic in impulse. It makes an analogy or equivalence between the natural process of learning an oral first-language and the unnatural process of learning alphabetic writing. The emotive weight in progressivist ideas is on the value of naturalness. The natural is spiritually nourishing, and the artificial is spiritually deadening. Back in the 1920s the progressivist William Kilpatrick of Teachers College, Columbia University, and others were already advocating the whole language method of teaching reading for many of the reasons advanced today. The task of intellectual history is to explain why a method with small support in mainstream science and little success with many children should hold sway for so long.

As with reading, so with math and science. The progressivist believes that it is better to study these subjects through real-world, hands-on, natural methods than through the deadening modes of conceptual and verbal learnings or the repetitive practice of math algorithms. But the artificial symbols systems and algorithms of mathematics are the sources of its power. Natural, real-world intuitions are helpful in math, but there should be no facile opposition between terms like *understanding*, *hands-on*, and *real-world applications* and terms like *rote learning* and *drill and kill*. What is being killed in memorizing the multiplication table? The progressivist says: children’s joy in learning, their intrinsic interest, and their deep understanding.

Artificial modes of learning are said to inhibit understanding and kill the soul, whereas natural methods are said to nourish it. There may be a practical value in applying the traditions of intellectual history to the origins and unspoken assumptions of this progressive faith. If enough people start questioning these unspoken assumptions, which, when spoken, are open to serious challenge from science and common sense, a shadow of doubt may begin to fall. Whenever I am asked which education reform program is likely to be the most effective—better teacher training, more charter schools, or various governance reforms—my reply is that there is less need for change in the structure of governance than for change in the structure of ruling ideas. The dominance of progressive ideas, not the incompetence of education professors, has induced our teacher-training institutions to deemphasize subject matter and thus produce teachers who

know too little about the topics they should teach. Some education professors took personally my critique of progressivism in *The Schools We Need* (1996) as another example of education school bashing. But my thesis was not that poor teacher training is caused by ineptitude but, on the contrary, by an all-too-ept advocacy of Romantic ideas; not by incompetence but by an all-too-competent rhetoric in the service of the notion that specific subject-matter knowledge has only secondary importance. In the face of continuing practical failures, it would be hard to explain the more than nine lives of progressivism, except on the premise that its unspoken assumptions work a hidden sway not just over education schools but over the minds of Americans generally. If progressivism were not consonant with received ideas in the larger public about children and schools, the ideas would not maintain their sway. The public would not otherwise be so receptive, for example, to the disparagement of objective tests. Test bashing continues to be a successful rhetoric. One can understand that progressives should want to bash tests, when their methods consistently fail to improve test scores. But why should other citizens accept the disparagement of, say, reading tests, which are among the most valid and reliable instruments that exist? Wide public acceptance of test bashing suggests that it is tapping into powerful subterranean sentiments about children and learning.

Here are a few quick examples of the consistent practical failures of progressive ideas.

Example one. Recently the Sunday *New York Times* published an article about an ideal school that was created with unlimited funds in an ideal Florida town by the Disney Corporation. The school follows the “most advanced” progressive theories. The article, entitled “Trouble at the Happiest School on Earth,” began by noting that:

The start of the school year is just a few days away, so it was no surprise that there was a line of parents at the Celebration School office the other day. But the reason for the line was: they were queuing up to withdraw their children.

It turned out from this report that the “brand new” theories of the Disney school are rebottled versions of the theories Kilpatrick used to create his ideal progressive school in the 1920s—multiage groupings, where each child can go at his or her own pace; individualized assessments rather than objective tests; teachers as coaches rather than sages; projects instead of textbooks; and so on. As the reporter correctly remarked, “Most of

these concepts have been tried in one form or another at progressive schools.” But he forgot to note that the methods rarely worked well in the earlier schools either. So why haven’t these failures induced more skepticism among teachers, administrators, and distinguished professors?

Example two. Some days before I read the Disney school article, I read two pieces from the *San Jose Mercury News* about two inner-city schools in Los Angeles. The disadvantaged students at one school were achieving exceptional academic results and were closing the test-score gap between groups. The other school was a progressive school with a highly similar population of students who were achieving at an abysmally low level.¹ They are valuable documents for intellectual history because of the concrete way in which the reporters examine the rhetoric that animates the successful Classical school and the unsuccessful progressive one.

Example three. The contrast between Classical and progressive public schools in Los Angeles duplicates the contrast found by distinguished sociologist James S. Coleman in the 1980s when he showed that Catholic schools achieved equity better than public schools because they follow a rich and demanding curriculum, require a lot of drill and practice, and expect every child to reach minimal goals in each subject during the year. As a result disadvantaged children prosper academically (as do their advantaged peers), and the Catholic schools narrow the gap between races and social classes. When he was criticized for condemning public schools, Coleman, chief author of the famous “Coleman Report” of 1966, pointed out that the same democratic results were being achieved by the handful of public schools that were also defying progressivist doctrine.

I have used Coleman’s work of the 1980s as an example because it is a carefully controlled, large-sample work that has never been rebutted. Along with large-scale international comparisons, it is the most reliable observational data that we have regarding the validity of progressive ideas. The evidence mounts still higher if you combine Coleman’s data with so-called effective-schools research, which has shown that school effectiveness is enhanced by explicit, agreed-upon academic goals for all children; a strong focus on academics, order, and discipline in the classroom; maximum time on learning tasks; and frequent evaluations of student performance—all principles followed by Classical schools but repudiated by the Disney school and also by many of the “whole school” designs for which so much fed-

1. The articles are too detailed to quote here, but they can be viewed at the website of the *San Jose Mercury News*, www.mercurycenter.com.

eral money is being misspent. In fact, one could take each of the principles of effective-schools research (such as uniform and explicit learning goals), negate them, and you would usually have a description of progressivist principles.

If these observational data were not enough to suggest a lack of correspondence between progressive ideas and reality, then consider as well their unfortunate lack of congruence with consensus theoretical principles that have been developed in cognitive science (such as the principle that explicit, step-by-step learning is more often effective than indirect learning). None of this has mattered. These unempirical progressive theories—dressed up with empirical claims—have held both education professors and a large portion of the American public in thrall. Why? This is a question for the intellectual historian rather than the puzzled scientist.

So to my task. The fundamental beliefs of progressivism are impervious to unfavorable data because progressivism is an expression of Romanticism, and Romanticism is a religious outlook that, like all religions, is inherently resistant to data. A religious believer is scornful of mere “evidences.” Of course, most of our nonreligious ideas are also resistant to change. Even science tries to preserve its old theories against new findings, as when it held to the idea that the earth is the center of the solar system, arguing that the planets move in complicated epicycles rather than simple orbits. But religious beliefs are the most resistant to change of all.

Progressivism has all the characteristics of religious belief, including the sense of a direct connection with the holy, which it invokes by the word *nature*. We know in advance, in our bones, that what is natural must be better than what is artificial. This revelation is the absolute truth against which experience itself must be measured, and any failure of educational practice must be due to faulty implementation of progressive principles or faulty interpretation of the results. Reading tests must not be taken at face value, because such blunt instruments cannot measure the true effects of education.

The religious character of progressivism is rarely noted because it is not an overtly religious system of belief. Romanticism is a *secularized* expression of religious faith. In a justly famous essay, “Classicism and Romanticism,” T. E. Hulme defined Romanticism as “spilt religion.” Romanticism, he said, redirects religious emotions from a transcendent God to the natural divinity of this world. Transcendent feelings are transferred to everyday experience—as Hulme put it, like “treacle spilt all over the table.” A more sympathetic definition of this tendency was offered by M. H. Abrams

of Cornell University, who entitled his fine book on Romanticism *Natural Supernaturalism*. That phrase accurately describes the Romantic's fusion of the secular and the religious. The natural is supernatural. Logically speaking, that is a contradiction, but emotionally it catches the Romantic's faith that a divine breath infuses natural human beings and the natural world.

In emotional terms, Romanticism is an affirmation of this world—a refusal to deprecate this life in favor of pie in the sky. In theological terms, this sentiment is called “pantheism”—the faith that holiness inhabits all reality. Transcendent religions like Christianity, Islam, and Hinduism see this world as defective, and consider the Romantic divinizing of nature to be a heresy. For the Romantic, the words *nature* and *natural* take the place of the word *God* and give nature the emotional ultimacy that attaches to divinity. That is the source of Abrams's paradox: “natural supernaturalism.”

One impulse from the vernal woods [William Wordsworth said]
 Can teach us more of man
 Of moral evil and of good
 Than all the sages can.

Although Romantics have complete confidence that our natural impulses work providentially for good in ways beyond our comprehending, they have no such confidence in social custom and human reason. On the contrary, these are the sources of evil and the infection of the soul. This naturalism explains the no-fault complacency with which a progressivist teacher reassures the concerned parent not to worry if Johnny or Jane is not reading at grade level. All will come right when the child is developmentally ready. One must not interfere with the child's natural course of development.

The Romantic conceives education as a natural growth. Botanical metaphors are so pervasive in the educational literature that they are taken for granted. The teacher, like a gardener, should be a watchful guide on the side, not a sage on the stage. (The word *kindergarten*—literally “children-garden”—was invented by the Romantics.) Romantics began translating the Latin word *ee-duck'co* as meaning “leading out” or “unfolding,” confusing it with *e-dook'co*, meaning “to lead out.” It was a convenient mistake that fits in nicely with the theme of natural development, since the word *development* itself means “unfolding.” But the actual Latin root word for education is *ee-duck'co*, which means “to bring up” and “in-

struct.” It implies deliberate training according to social and cultural norms, in contrast to words like *growth* and *development*, which imply that education is the unfolding of human nature, analogous with a seed growing into a plant.

The regular textbook description of the Romantic movement is that it substituted the organic fecundity of nature for civilized constraints and rules. In education, the artificial constraints of the ordinary school were to be replaced by methods that permitted natural development. Chairs should be scattered around the room to accommodate children of various ages going at their own paces, rather than forcing children of the same age to do the same thing while sitting in neat Classical rows.

Just as Wordsworth said, “We murder to dissect,” the progressivist says that phonemics in reading lessons and place value in math should not be dissected in isolation from their natural use nor imposed before the child is naturally ready. Instead of dissection, the Romantic wants integration and natural development, as happens naturally in the real world. Thus the Romantic prefers “whole language,” “integrated learning,” and “developmental appropriateness” to more effective analytical approaches. The Romantic holds that education that places subject matter in its natural setting is superior to the abstractions of language. Hands-on learning is superior to verbal learning. Real-world applications of mathematics provide a truer understanding of math than empty mastery of formal relationships. None of this is actually true.

The same religious sentiment underlies the Romantic celebration of individuality and diversity. The individual soul is holy because its spark is from God. Praise for diversity as superior to uniformity originates in the pantheist’s sense of the plenitude of God’s creation. This religious origin for the aesthetics of diversity, which we now take so much for granted, was the main theme of Lovejoy’s famous book, *The Great Chain of Being*. “Nature’s holy plan,” as Wordsworth put it, unfolds itself with the greatest possible variety. To impose uniform standards on the individuality of children is to thwart their fulfillment and pervert the Design of Providence. The aesthetics of diversity is thus powerfully reinforced by the religious certainty that imposing any norm that is uncongenial to the child’s nature is evil. Motivation to learn should be stimulated through the child’s inherent interest in a subject, not through artificial rewards and punishments. Contrived inducements to learn, being unnatural, do not work permanently to the benefit of education. What others might view as complacent neglect is viewed by the progressivist as “wise passiveness” (Wordsworth’s

phrase again). Education should be child-centered. It should fit the child, not vice versa. As William Blake put it in *The Marriage of Heaven and Hell*, “One law for lion and ox is oppression,” which is an early statement of the theme of “individual differences” and “multiple intelligences.”

Whether these educational tenets can withstand empirical examination is irrelevant. Their validation comes from knowing in advance, with certainty, the overarching principle of Romantic theology: the natural is good, the artificial is bad. It is a principle that persists even when all consciousness of its original religious underpinnings has disappeared. I still remember my own astonishment, as an American bred in American Romanticism, to discover that the Elizabethans frequently used the word *artificial* to express approval. Since most of us still share the Romantic identification of the nonnatural with the nongood, it is worth pausing to contrast Romantic and Classical views on this precise point.

Plato and Aristotle based their ideas about education, ethics, and politics on the concept of nature, just as the Romantics did. A Classicist knows that any attempt to thwart human nature is bound to fail. But the Classicist does not assume that a providential design assures the ultimate rightness of relying on our individual natural impulses. On the contrary, Aristotle argued that human nature is a battleground of contradictory impulses and appetites. Selfishness is in conflict with altruism; the fulfillment of one appetite is in conflict with the fulfillment of others. Follow nature, yes, but which nature and in what degree?

Aristotle’s famous solution to this problem was to optimize human fulfillment by balancing the satisfactions of all the human appetites—from food and sex to the disinterested contemplation of truth, also keeping in mind society’s need for civility and security. This optimizing of conflicting impulses required the principle of moderation—the Golden Mean—not because moderation was in itself a good, but because, in a secular view of conflicted human nature, this was the most likely route to social peace and individual happiness. Against the Golden Mean, the Romantic Blake countered, “The Road of Excess leads to the Palace of Wisdom.” But that would be true only if a providential nature guaranteed this happy outcome. Absent such faith in the hidden design of natural providence, the mode of human life most in accord with nature must be, according to Aristotle, through media that are artificially constructed. By this Classical logic, the optimally natural has to be self-consciously artificial.

This Classic-Romantic debate has a new currency because of recent interest in evolutionary psychology. The Darwinian moral philosophers

from T. H. Huxley to E. O. Wilson reject the notion that evolution should be a direct guide to ethics or to education. On the contrary, evolutionary psychology reintroduces in its own way the Classical idea that there are inherent conflicts in human nature, both selfishness and altruism, both a desire to possess one's neighbor's spouse and a desire to get along with one's neighbor. The adjudication of these contradictory impulses requires an artificial construct like the Ten Commandments. Similarly, most of the learning required by modern schooling is not natural from the standpoint of evolution. Industrial and post-industrial life, which have arrived very recently in evolutionary terms, require kinds of learning that are constructed artificially and sometimes arduously upon the natural learning capacities of the mind.

Shakespeare was a Classicist on this score. He depicts the early ages of human life as:

first the infant

Mewling and puking in the nurse's arms.

And then the whining school-boy, with his satchel

And shining morning face, creeping like snail

Unwillingly to school.

Shakespeare clearly had a less joyful view of schooling than Jean-Jacques Rousseau, Wordsworth, and John Dewey. The idea that skills as artificial and difficult as reading, writing, and arithmetic can be made natural for everyone is an illusion that has been able to flourish in the peaceful, prosperous United States. John Keats once observed that Romantic pantheism could only thrive in places like the English Lake District, but not in Tierra del Fuego. When John Dewey was writing during the optimistic decades of the early twentieth century, he had been influenced by the Romantic philosopher G.W. Hegel, who believed that the forward-moving processes of culture were extensions of the processes of nature. The more skeptical Classical view was memorably enunciated by the "old codger" Max Rafferty, former California superintendent of education, in speaking about the Progressive school in *Summerhill: For and Against*:

Rousseau spawned a frenetic theory of education which after two centuries of spasmodic laboring brought forth . . . Summerhill. . . The child is a Noble Savage, needing only to be let alone in order to insure his intellectual salvation. Don't inhibit him. Never cross him, lest he develop horrible neuroses in later life. . . just leave the kids alone.

They'll educate themselves. Twaddle. Schooling is not a natural process at all. It's highly artificial. No boy in his right mind ever wanted to study multiplication tables and historical dates when he could be out hunting rabbits or climbing trees. In the days when hunting and climbing contributed to the survival of homo sapiens there was some sense in letting the kids do what comes naturally, but when man's future began to hang upon the systematic mastery of orderly subject matter, the primordial, happy-go-lucky, laissez faire kind of learning had to go. . . . The story of mankind is the rise of specialization with its highly artificial concomitants. . . . When writing was invented, "natural" education went down the drain of history. From then on, children were destined to learn artificially. . . . This is civilization—the name of the game. . . . All civilization is artificial.

The Romantic versus Classic debate extends beyond the reading and math wars to the domain of moral education, and it would be myopic not to mention that aspect of the debate, since for most of human history ethical education has been considered more important than numeracy and literacy. The Romantic tradition holds that morality (like everything else) comes naturally. The child, by being immersed in real-life situations and exposed to good role models, comes to understand the need for sharing, kindness, honesty, diligence, loyalty, courage, and other virtues. Wordsworth's account of his own education, in *The Prelude*, which he subtitled "The Growth (n.b) of a Poet's Mind," contained a section entitled the "Love of Nature Leading to Love of Man." Ethical understanding is gained by an inevitable natural progress, such as Hegel portrayed.

The Romantic wishes to encourage the basic goodness of the natural soul, unspoiled by habit, custom, and convention. The principal means for such encouragement is to develop the child's creativity and imagination—two words that gained currency in the Romantic movement. Before the Romantics, it was considered impious to use the term *creativity* for human productions, but that ceased to be the case when the human soul was conceived as inherently godly. Moral education and the development of creativity and imagination were felt to go hand in hand. The gradual dominance of this new vision of moral education can be traced in the history of American language arts curriculum. In the nineteenth and early twentieth century, schoolbooks like the McGuffey Readers strongly emphasized moral instruction and factual knowledge. Gradually, the subject matter of language arts in the early grades began to focus on fairy tales

and poetry. The imparting of explicit moral instruction gave way to the development of creativity and imagination. Imagination, Samuel Coleridge said in his *Biographia Literaria*, “brings the whole soul of man into activity.” When we exercise our imaginations, we connect with our divine nature, develop our moral sensibilities.

It must be obvious from the tenor of my brief account of progressive education, as being based on religious faith in nature, that I believe it to be a thoroughly misplaced faith. We will begin to see widespread improvement in our public education only when we see widespread doubt cast on its endemic Romanticism. Everyone grants that schooling must start off from what is natural. But schooling cannot effectively stay mired there. A new educational era will dawn only when the word *natural*, as applied to schooling, is viewed with greater skepticism, and when the word *artificial* ceases to imply only disapproval. One does not have to be a confirmed Classicist to perform this transvaluation of values; one need only be a confirmed pragmatist, devoted to what works. With as great a certainty as these things can be known, we know that analytical and explicit instruction works better for most learning than inductive, implicit instruction. To be analytical and explicit in instruction is to be artificial. Also, it is to be skeptical that children will naturally construct for themselves either knowledge or goodness.

To conclude, one cannot hope to argue against a religious faith that is impervious to refutation. But there can be hope for change when that religious faith is secular and pertains to the world itself. When the early Romantics lived long enough to experience the disappointments of life, they abandoned their Romanticism. This happened to Blake, Wordsworth, and Coleridge.

One of Wordsworth’s most moving works was the late poem, “Elegiac Stanzas,” which bade farewell to his faith in nature. The other Romantics penned similar farewells to illusion. There is a potential instability in natural supernaturalism. Romantic religion is vulnerable because it is a religion of this world. If one’s hopes and faith are pinned on the here and now—on the faith that reading, arithmetic, and morals will develop naturally out of human nature—then that faith may gradually decline when this world continually drips its disappointments.

Moreover, Romantic faith in the providence of nature is inconsistent with our modern understanding of the contingency of all things. Modern evolutionary theory is a hymn to contingency. So is much modern poetry. Robert Frost gives us this little post-Romantic poem called “Design.”

I found a dimpled spider, fat and white,
On a white heal-all, holding up a moth
Like a white piece of satin cloth—
Assorted characters of death and blight
Mixed ready to begin the morning right,
Like the ingredients of a witch's broth—
A snow-drop spider, a flower like a froth,
And dead wings carried like a paper kite.

What had that flower to do with being white,
The wayside blue and innocent heal-all?
What brought the kindred spider to that height,
Then steered the white moth thither in the night?
What but design of darkness to appall?
If design govern in a thing so small.

The Romantic thinks nature has a holy plan. The Classicist, the modernist, and the pragmatist do not, and neither does the scientist. In the end, the most pressing questions in the education wars are not for me just empirical, scientific questions, but also ethical ones regarding the unfortunate social consequences of the progressive faith, especially the perpetuation of the test-score gap between groups. Are we to value the aesthetics of diversity and the theology of spilt religion above economic justice and political justice? That is the unasked question that needs to be asked ever more insistently. Economic and political justice are strenuous goals. They cannot be achieved by doing what comes naturally.