

The Schools We Need
And Why We Don't Have Them
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Anchor Books, 1999

The educational standpoint from which this book is written may be accurately described as neither "traditional" nor "progressive." It is pragmatic. Both educational traditionalists and progressivists have tended to be far too dogmatic, polemical, and theory-ridden to be reliable beacons for public policy. The pragmatist tries to avoid simplifications and facile oppositions. This book will argue that the best guide to education on a large scale is observation of practices that have worked well on a large scale, coupled with as exact an understanding as possible of the reasons why those practices have succeeded in many different contexts.

While the ideological terms "conservative" and "progressive" may be two of the most effective labels by which the old educational ideas continue to sustain themselves, the educational community exhibits a further tendency toward terminological polarization and intellectual caricature. Premature polarization of viewpoints is the chief device by which the educational community maintains the intellectual status quo. "Modern" and humane "reform" is pitted against a "traditional" evil empire. The following rhetorical pairings are typical:

- Traditional vs. modern
- Merely verbal vs. hands-on
- Premature vs. developmentally appropriate
- Fragmented vs. integrated
- Boring vs. interesting
- Lockstep vs. individualized

Parents presented with such choices for the education of their children would be unlikely to choose traditional, merely verbal, premature, fragmented, boring, and lockstep instruction over modern, hands-on, developmentally appropriate, integrated, interesting, and individualized instruction. Since this technique of over-simple contrast is so effective, and at the same time so misleading, it may be useful to foreshadow some of the topics this book will examine by providing a prefatory glimpse of the complexities hidden beneath such polarities. (p. 6)

Despite its influence and resounding title, *Foundations of Method* [by William Heard Kilpatrick] is remarkably disappointing as an intellectual performance. It is cast in the form of a conversation, but the only ideas developed with any semblance of sustained argument and evidence are the opening ones concerning abstract "laws of thought," and scientific-sounding terms like "neurones," "synapses," "mental set," "stimulus-response," and so on. Whatever the enduring soundness of these highly generalized psychological principles, their connection to a specific pedagogical method of the sort Kilpatrick advocates is not, and cannot be, effectively argued. Kilpatrick does not seem to notice that the very generality of such principles can be used to justify any effective pedagogical method, since every pedagogy which works must by that very fact apply laws of thought which are by definition universal. This is a logical difficulty that continues to plague, or ought to plague, the new scientific proponents of psychological "constructivism." In the end, it is concrete results by which pedagogical methods are to be judged. For all Kilpatrick's stress on the individuality of the student and the autonomy of the teacher, one misses in his exposition any appreciation of the subtle ways in which general psychological laws need to be mediated in hugely diverse ways by the diverse cultures of particular classrooms and teachers. (p. 120)

In short, educationist ideas have been carried too far. The self-aggrandizing Thoughtworld that established itself in the teens and twenties of this century was too much concerned with its status and self-identity, and too little concerned with the high democratic ideals of service and practicality that originally held sway over the education profession in the United States. The tradition of Horace Mann got submerged in the tradition of William Heard Kilpatrick. Idealistic practicality gave way to a militant separatism that expanded its half-truths to cover the whole educational landscape. Any idea carried too far loses the element of truth it once possessed. Now, after six decades of antiknowledge extremism, it is unclear whether the public needs to oppose this defective tradition with a countervailing extremism that repudiates process in favor of knowledge, or whether it might be possible to reintroduce a tradition of accommodation whose hallmarks are skepticism, openness, and practicality. The second approach would be preferable, but either approach would result in an education system far better than the one we now have. (p. 126)

But constructivism is not only desirable, it is also universal. It characterizes all meaningful learning no matter how derived. The nature of one's constructed understanding is normally irrelevant to the means by which one constructed it. Once a person has constructed the meaning of $5 + 2 = 7$, the procedure by which he or she gained that understanding becomes a matter of complete indifference. The confusion of a destination with the means used to get there is a logical confusion that has even been given a name: "the genetic fallacy." The leap from the general theory of constructivism to advocacy of the particular practice of discovery learning is overhasty and logically illegitimate. Any learning that involves the meaningful use of language is self-evidently constructed learning—unless one believes in thought transference or mental telepathy. The only way a student can understand what a teacher or anyone else is saying is through a complex, sometimes strenuous activity of constructing meaning from words. Hearing a lecture—in the event that one is understanding it—requires an active construction of meaning. Listening, like reading, is far from being a passive, purely receptive activity.

But the very universality of constructivism implies certain drawbacks for the practical application of the theory. Since most learning activity, including listening to a lecture, is constructivist, constructivism is an uncertain guide to teaching practice. Regardless of teaching method, the amount of constructive activity students engage in can vary for different students under the

same classroom circumstances. Sometimes their construction is an active misconstruction, as when first graders pledge allegiance to the "Republic of Richard Stands." There is no necessary relation between the mode of instruction offered by the teacher and the amount of active meaning-construction engaged in by the student. In fact, as I shall show later on, the amount of useful construction and learning that occur depends chiefly on the amount of relevant background knowledge the student already possesses rather than on the mode of instruction.

It is true, on the other hand, that self-generated student-constructed learning (discovery learning) is sometimes better retained and more readily accessible than constructed learning that is teacher-induced. But if discovery learning is well retained, it also has drawbacks. It takes more time and is sometimes insecure in its results—insecure not in the durability of what is remembered but in the content of what is remembered. Students "discover" all sorts of things, some of them irrelevant to the purposes at hand and some of them wrong. To choose the discovery technique over another is to choose one application of constructivism over another. Such choices are practical ones to be determined on each occasion by educational goals and results, not by special sanction from neutral psychological theory. Discovery learning must, in the end, be justified by its observed effectiveness, and on that score, the results emphatically do not justify an extreme or exclusive reliance on what is currently called "constructivist" practice. Educators are too hasty in concluding that constructivism justifies "MORE experiential, inductive, hands-on learning, MORE active learning with all the attendant noise of students doing, talking, collaborating," and so on. This faulty inference is based on the assumption that other forms of learning involve mere "transmission" and "reception" instead of the active construction of knowledge. But all meaningful learnings, induced by any and all methods, entail such active construction.

In short, the term "constructivism" has become a kind of magical incantation used to defend discovery learning, which is no more sanctioned by psychological theory than any other form of constructed learning. To pretend that it is so sanctioned illustrates what I mean by the "selective use of research." Despite the enthusiastic invocations of the term "constructivism," neither discovery learning nor any other form of pedagogy is specially singled out and sanctioned by modern psychology. (p. 134)

The best research on this subject shows that neither fact-filled memorization nor large conceptual generalizations are effective modes of education for higher-order thinking about the complexities of the modern world. On the other hand, it has been shown that accurate factual estimates are necessary for understanding many issues. Norman Brown and Robert Siegler summarize the underlying problem for modern education:

Faced with the issue of how to inculcate such information, educators have oscillated between two approaches. One has been to require students to memorize large numbers of quantitative facts. The other has been to de-emphasize dates, magnitudes, and other quantities, and to focus on understanding of qualitative relations. Each of these approaches has major drawbacks, however.... There are just too many such facts for anyone to memorize a high percentage of them. On the other hand, it is difficult if not impossible to acquire more than a superficial understanding of a domain without some degree of quantitative sophistication about it.

The breadth-depth issue will always be with us, and will always require compromises and common sense. The particular compromise one makes will depend upon subject matter and goals. In practice, an appropriate compromise has been reached by self-taught, well-informed people and by the fortunate students of particularly able teachers. One well-tested teaching method, already followed by many good books and teachers, provides students with a carefully chosen but generous sampling of factual data that are set forth in a meaningful web of inferences and generalizations about the larger domain. Researchers have shown that such generously selective factual instruction leads to accurate inferences not directly deducible from the literal facts that were taught. (p. 156)

Despite the popularity of the artifact motif in our progressive education tradition, and despite its faith in the power of a few "real-world" projects to educate students "holistically" for the modern world, no state board or school district has yet abandoned the principle of requiring a broad range of different subject matters in elementary school. Across the land, there are still universal requirements for mathematics, science, language arts, and social studies.

Is this curricular conservatism a mere residue of traditional thinking, or does it indicate that common sense has not been defeated by Romantic theory? I favor the latter hypothesis. Despite the vagueness of state and district guidelines, their continued parceling out of schooling into different subject matters, against continued pleas for a more "integrated" and holistic approach, shows an implicit understanding that breadth of knowledge is an essential element of higher-order thinking. School boards have rightly assumed that the mental landscape needs to be broadly surveyed and mapped in order to enable future citizens to cope with a large variety of judgments. No effective system of schooling in the world has abandoned this principle of subject-matter breadth in early schooling. (p. 157)

The very thing which Horace Mann called upon teacher-training schools to do and which the American public assumes that such schools are doing—the teaching of effective pedagogy—is a domain of training that, according to both sympathetic and unsympathetic observers, gets short shrift in our education schools.⁷⁵ Instead, it is mainly theory, and highly questionable theory at that, which gets more attention in education-school courses. That point should be stated even more strongly: not only do our teacher-training schools decline to put a premium on nuts-and-bolts classroom effectiveness, but they promote ideas that actually run counter to consensus research into teacher effectiveness. In Section 1 of this chapter, I quoted the sorts of things our teachers are being told regarding classroom practice. It will be instructive to recall those things here, from the 1993 book called *Best Practice*:

In virtually every school subject, we now have recent summary reports, meta-analyses of instructional research, bulletins from pilot classrooms, and landmark sets of professional recommendations. Today there is a strong consensus

definition of Best Practice, of state-of-the-art teaching in every critical field... Whether the recommendations come from the National Council of Teachers of Mathematics, the Center for the Study of Reading, the National Writing Project, the National Council for the Social Studies, the American Association for the Advancement of Science, the National Council of Teachers of English, the National Association for the Education of Young Children, or the International Reading Association, the fundamental insights into teaching and learning are remarkably congruent. Indeed on many key issues, the recommendations from these diverse organizations are unanimous.⁷⁶

Then, as the reader may remember, the book lists twenty-five "LESS" and "MORE" admonitions on which all these organizations agree. Among them are the following:

1. LESS whole-class teacher-directed instruction
2. LESS student passivity, sitting, listening, receiving
3. LESS attempts by teachers to cover large amounts of material LESS rote memorization of facts and details
4. LESS stress on competition and grades
5. MORE experiential, inductive, hands-on learning
6. MORE active learning with all the attendant noise of students doing, talking, collaborating
7. MORE deep study of a smaller number of topics
8. MORE responsibility transferred to students for their work: goal-setting, record-keeping, monitoring, evaluation
9. MORE choice for students; e.g., picking their own books, etc.
10. MORE attention to affective needs and varying cognitive styles of students
11. MORE cooperative, collaborative activity.⁷⁷

The authors praise the current consensus on these "child-centered" principles for being "progressive, developmentally appropriate, research based, and eminently teachable." These claims are not, however, "research based" in the way the authors imply. Quite the contrary. No studies of children's learning in mainstream science support these generalizations. With respect to effective learning, the consensus in research is that their recommendations are worst practice, not "best practice."

This Alice in Wonderland reversal of reality has been accomplished largely by virtue of the rhetorical device that I have called "premature polarization." Discovery learning is labeled "progressive," and whole-class instruction "traditional." Under such descriptors, one mode is assumed to be active and engaging, the other passive and boring; one holistic and indirect, the other step-by-step and direct. As a result of such terminological polarization, the term "direct instruction," which is the mode advocated by a number of teachers and educational specialists, has come in for some heavy criticism from antitraditionalists. The distinction, however, between direct and indirect instruction is an unfortunate simplification of some complex issues. It overlooks, for instance, the different pedagogical requirements for procedural learning and content learning, and thus neglects the different pedagogical emphases needed at the different ages and stages of learning. Effective procedural learning requires "overlearning," and hence plenty of practice. Content learning is amenable to a diversity of methods that accommodate themselves to students' prior knowledge, habits, and interests. (p. 172)

Few teachers who aren't sadists are fond of grades and tests. After more than thirty years of teaching, I still view those parts of my job with a distaste that has grown rather than diminished with the years. Teachers want all of their students to be A students, each in his or her own way. They want them to work hard without the extrinsic motivations of punishment and reward, and to be motivated entirely by intrinsic interest in the subject matter at hand and by the inherent joys of learning and accomplishment. They wish and hope that students' inherent desire to learn and do a good job will be its own reward. Teachers often blame themselves when not every student is intrinsically motivated by schoolwork. Moreover, most teachers strongly dislike disappointing a student with a bad grade. On the other hand, they also dislike the idea of giving everyone the same grade, because doing so, apart from other disadvantages, is egregiously unfair to students who do better work. Consequently, most teachers feel compelled to perform the disagreeable acts of testing and grading because they feel a sense of responsibility not only to honesty and fairness but also—and this is the critical point—to effective teaching.

It has been shown convincingly that tests and grades strongly contribute to effective teaching. This commonsense conjecture was confirmed by research conducted after the antigrade, pass/fail mode of grading had become popular at colleges and universities in the 1960s and '70s. Quite unambiguous analysis showed that students who took courses for a grade studied harder and learned more than students who took the courses for intrinsic interest alone.³ This scientific confirmation of the common sense of Cranston, Rhode Island, parents runs counter to the claim that "research has shown" that giving marks inhibits learning. According to one expert quoted in the Education Week article, there are "detrimental aspects" of report cards that give grades because they make

learning a highly competitive activity. Students compete against each other for the few scarce rewards—the high grades—that are going to be administered by the teacher. It sets learning up as a win-lose situation for the students, and because the number of high grades is typically limited, most students will be losers.⁴

Losers in what sense? Since research has clearly shown that students learn more when grades are given, the main issue for this expert is not how much students learn but how much their self-concept may be affected. The antigrade view continues to be associated with its origins in Romantic egalitarianism, which declines to accept any version of the idea that "most students will be losers" (i.e., get less than super grades). But this absolute, Romantic version of egalitarianism is very different from Jeffersonian democratic egalitarianism, which aimed to give rich and poor the same foundations for achievement, but to be quite rigorous in selecting only the better students for subsequent free education through a system of tests and grades.⁵ This Jeffersonian version of meritocratic equality has been attacked even by (or especially by) some members of the testing community. In a recent newsletter put out by the UCLA Center for Research on Evaluation, Standards and Student Testing (CRESTT), one expert was quoted as saying that "Americans have long supported what she called procedural equity that ensures

that every one has access to valued goods. But substantive equity or equal results has never enjoyed public support." Far from accepting Jeffersonian meritocratic equality, the test expert recommended "re-educating" the public to favor equal results for everyone by appealing to their "self interest for a better society."⁶ This improvement is to be accomplished by repudiating standardized tests in favor of more "equitable" nonstandardized kinds which will ensure that every group performs the same. (p. 181)

Taking the trouble and expense to secure accuracy and fairness on performance tests is worthwhile in special, restricted cases, as I shall argue in a moment. But even when fairness is achieved, an inextinguishable arbitrariness lies at the heart of grading performance-based assessments. The causes of this arbitrariness have been analyzed and are well understood.¹² Not only do people disagree about what qualities make for good writing, good problem solving, good ice skating, good musicianship, and so on, but more important, even when they agree on the elements that make for high quality, they may disagree about the relative weights that should be awarded to those elements. Should quality of ideas, for instance, count for more in writing than quality of organization? Should style, flavor, and individuality count for more than grammar, spelling, and punctuation? The different weights that graders attach to these different aspects of performance may vary greatly between persons, and even for the same person when grading two different performances. (p. 184)

The final irony of the antitest movement is that in the name of social fairness it opposes using high-stakes tests as gatekeepers, monitors, and incentives—functions that are essential to social fairness. Without effective monitoring and high incentives, including high-stakes testing programs, no educational system has achieved or could achieve excellence and equity. Good tests are necessary to instruct, to monitor, and to motivate. John Bishop has shown in great detail the importance of high-stakes tests in motivating students to work hard.⁴⁵ The Romantic idea that learning is natural, and that the motivation for academic achievement comes from within, is an illusion that forms one of the greatest barriers to social justice imaginable, since poor and disadvantaged students must be motivated to work even harder than advantaged students in order to achieve equality of educational opportunity. It was Antonio Gramsci, that wise spokesman for the disadvantaged and disenfranchised, who wrote that the gravest disservice to social justice entailed by Romantic theories of education is the delusion that educational achievement comes as naturally as leaves to a tree, without extrinsic motivation, discipline, toil, or sweat. (p. 214)

We cannot afford any more decades dominated by ideas that promote natural, integrated project-learning over focused instruction leading to well-practiced operational skills in reading and mathematics, and well-stocked minds conversant with individual subject matters like history and biology. We need to reject the ill-founded notions that every child learns naturally at his or her own pace and that teaching the child is more important than teaching the subject (whatever that means, beyond failure to teach the subject). We must not accept the claim that knowing how to learn (which is an abstract skill that does not even exist) is more important than having a broad foundation of factual knowledge that really does enable further learning. We must reject the disparagement of verbal learning and the celebration of "hands-on" learning, based on the false Romantic premise that mere words are inauthentic components of human understanding. We cannot afford still to accept the untrue belief that adequate schooling is natural and painless, and mainly a function of individual talent rather than hard work. We must reject the false claim that delaying learning until the child is "ready" will speed up learning in the long run. We must cease listening to the siren call that learning should be motivated entirely by inward love of the subject and interest in it, without a significant admixture of external incentive. In short, we must cease attending to the Romantic ideas that the reformers of the 1990s, echoing the reformers of the 1920s, '30s, and '40s and all the decades in between, have been pronouncing in chorus. These ideas are emphatically not reforms. They are the long-dominant controlling ideas of our failed schools.

Those ideas fall on receptive ears among teachers and Americans generally because of their conformity with our Romantic assumptions about the superiority of the natural over the artificial. It is assumed that integrated, lifelike learning is natural, since that is the kind of learning which supposedly takes place in "real life," in a state of nature, outside of school, and it is assumed that this "integrated" approach is therefore the more effective context for human education inside the school as well. (p. 216)

It will be useful to restate why the two fundamental tenets of American educational orthodoxy, formalism and naturalism, are incorrect. By "formalism" I mean the belief that the particular content which is learned in school (the content I have called "intellectual capital") is far less important than acquiring the formal tools which will enable a person to learn future content. This tool-providing idea is the source of the dictionary-accessing and critical-thinking exercises that now pervade the schools, in lessons where the content of what is being accessed or critically thought about is left up for grabs. I call this approach "formalism" because it considers the main goal of education to consist in giving students formal intellectual tools like "learning to learn," "accessing skills," and "critical-thinking skills" rather than in transmitting knowledge.

By the second term, "naturalism," I mean the belief that education is a natural process with its own inherent forms and rhythms, which may vary with each child, and is most effective when it is connected with natural, real-life goals and settings. Naturalism assumes that the best mode of learning is the one that follows and supports this lifelike and inherent process of development. Schooling which goes against this natural process is believed to be either ineffective or spiritually harmful. Both formalism and naturalism are half-truths—the most pernicious kinds of errors because they appear so plausible.

Educational formalism is in error in purely practical terms, because an emphasis on process and skills rather than on content does not in fact result in significantly improved formal skills for students. The real-life competencies that people need, such as the abilities to read, to write, to communicate, to learn, to analyze, and to grasp and manipulate mathematical symbols, have major components that psychologists have found to be "domain-specific." This means that an ability to think critically about chess does not translate into an ability to think critically about sailing. An ability to read or write effectively about the Civil War does not translate into an ability to read or write effectively about agriculture. It is true that certain operations of reading are the same from one task to another, so that expertness in reading partly depends upon the automation (through a great deal of practice) of those repeated operations, thus freeing the conscious mind for critical thought. But competent reading about the

Civil War also depends upon the acquisition of the relevant vocabulary, conventions, and schemas that form the relevant knowledge base for reading and learning about the Civil War. There is no substitute for this requisite domain-specific content knowledge in the performance of reading or any other intellectual skill.

It is a fallacy, then, to claim that the schools should or could teach all-purpose reading, thinking, and learning skills. But paradoxically, adequate attention to the transmission of broad general knowledge actually does lead to general intellectual skills. The paradox is quite stunning. Our emphasis on formal skills has resulted in students who are deficient in formal skills, whereas an appropriate emphasis on transmitting knowledge results in students who actually possess the skills that are sought by American educators—skills such as critical thinking and learning to learn. (p. 218)

These few basic principles of learning apply universally: the distinction between primary and secondary learnings, the importance of early beginnings, the need for effort and practice, the need to automate operations and develop relevant intellectual capital to overcome the limitations of short-term memory, and the cumulative nature of learning. These principles apply to everybody—the palace-tutored prince as well as the neglected pauper. There are a great many ways of applying these principles intelligently. That is a good argument for giving teachers a lot of freedom, so long as they get good results. But while there are a lot of ways to skin the cat, there is no way of dispensing with the separation of the cat from his skin. The fundamental principles themselves cannot be circumvented. Moreover, when they are put into practice in teaching large numbers of children in large systems of education, the possible ways of applying them effectively and fairly begin to narrow. (p. 226)

The complexities of classroom instruction are so great, and the cultural and personal variables so numerous, that it is the better part of wisdom not to advocate highly specific classroom practices. On the other hand, education schools should be doing a better job of exposing teachers to the research about classroom methods that, on average, work best. Few teachers I have spoken to are aware of the existing process-outcome research into pedagogy. The lack of nuts-and-bolts pedagogical training in education schools was exposed by W. James Popham in a highly significant but rarely discussed study.¹⁷ Popham showed that because of the failure to instruct prospective teachers about the best research into effective pedagogical methods (the findings of which happen to contravene the naturalistic approaches that continue to be advocated), uncertified persons, plopped into the classroom without having taken education courses, got results that were as good as those obtained by certified and experienced teachers.

In view of that outcome, the most important policy implication for teachers and schools would be to reconsider the validity of naturalistic principles, such as letting children advance at their own pace or letting knowledge and skills develop automatically through integrated projects and independent discovery. The existing research says that these methods do not work well. The best way to develop a skill or a domain of knowledge in a group of students is to focus (by any number of agreeable and interesting methods) on that skill or that domain, and to monitor whether that skill or that knowledge has in fact been gained. The research also shows that external incentives combined with intrinsic ones work better than intrinsic incentives alone. It shows that skill and knowledge do not come without effort, even to talented students, suggesting that an accomplishment-through-diligence mentality is more productive than a learning-is-easy-and-joyful mentality—more productive for both students and teachers, and in the end, more satisfying.

Education schools currently do not convey to our teachers the results of this firmly established research showing the superior effectiveness of clear focus, definite standards, diligent practice, and continual monitoring through tests and other means. Instead, American education schools derogate such traditional practices in favor of the progressive program of individual pacing, discovery learning, thematic teaching, nonobjective testing, and so on. Their captive audiences, consisting of millions of teachers, are offered no intellectual alternatives to these constantly repeated mistakes, which are, indeed, presented as fruits of the most recent research. The resulting pandemic of mistaken ideas may be the gravest barrier to America's educational improvement. If this disabling indoctrination continues unabated, then something quite revolutionary will have to be done about our system of training and certifying teachers. A beginning can be made by insisting upon more intellectual diversity within education schools. The tenacity and unanimity with which they adhere to the progressive doctrine may be owing to that doctrine's inability to withstand empirical and intellectual challenge in a free and open encounter. If such is the case, as I believe, then perhaps a rather small cadre of maverick professors in every education school might soon make the whole Wizard of Oz apparatus collapse like a punctured balloon. (p. 230)

Whether multiculturalism should be given a Romantic, separatist form (in the tradition of Fichte) or an Enlightenment, cosmopolitan form (in the tradition of Kant) has an obvious bearing on the educational question of common learnings in the early grades.²⁷ In my view, the Romantic version of ethnicity is as deleterious to public education as the Romantic conception of pedagogy. The common learnings taught in school should promote a cosmopolitan, ecumenical, hybrid public culture in which all meet on an equal footing—a culture that is as deliberately artificial and nonsectarian as our public invocations of the Divinity. This school-based culture belongs to everyone and to no one. Its function is analogous to that of the hybrid lingua francas of the medieval marketplace, which were the antecedents of the major national languages—themselves hybrid, artificially constructed affairs, mostly codified by committees. (p. 235)

Entries in the *Critical Guide to Educational Terms and Phrases*

From the *Introduction*: On the authority of this professional consensus, teachers were instructed to de-emphasize and deplore practices represented by bad words like "wholeclass instruction," "passive listening," "textbooks," "broad coverage," "rote memorization of facts," "competition," "grades," and "standardized tests," and to accentuate practices represented by good words like "hands-on learning," "discovery learning," "less is more," "student responsibility," "individual learning styles," "cooperative learning," and "nonstandardized assessments." None of this advice is sound. Yet, for any prospective teacher to whom the advice is presented so authoritatively and repeated so often, it would be reasonable to assume that it must be true.

Repetition and consensus give the phrases a self-evident, not-to-be-questioned quality which induces those who repeat them to believe them earnestly and implicitly.

Almost all the familiar phrases can be grouped under five themes of progressive education, indicating once again the persistence and power of the progressivist doctrines promulgated from Teachers College in the teens and twenties and then replicated in every education school in the nation. Here are the five themes, along with the phrases still used to support them:

1. **Tool conception of education:** "accessing skills," "critical-thinking skills," "higher-order skills," "learning to learn," "lifelong learning" "metacognitive skills," "problem-solving skills," "promise of technology."
2. **Romantic developmentalism:** "at their own pace," "child-centered schooling" "developmentally appropriate," "factory-model schools," "individual differences," "individualized instruction," "individual learning styles," "multiaged classroom," "multiple intelligences," "one size fits all," "student-centered education," "teach the child, not the subject."
3. **Naturalistic pedagogy:** "constructivism," "cooperative learning" "discovery learning" "drill and kill," "hands-on learning" "holistic learning" "learning by doing" "open classroom," "multiaged classroom," "project method," "rote learning" "thematic learning" "whole-class instruction," "whole-language instruction."
4. **Antipathy to subject-matter content:** "banking theory of schooling" "facts, inferior to understanding" "facts are soon outdated," "intellectual capital," "less is more," "mere facts," "rote learning" "textbook learning" "transmission theory of schooling" "teaching for understanding."
5. **Antipathy to testing and ranking:** "authentic assessment," "competition," "exhibitions," "performance-based assessment," "portfolio assessment." (p. 240)

From the *Glossary*:

"Authentic assessment." A laudatory term for "performance assessment," where students receive grades for their performances on realistic tasks such as writing a letter, producing a play, and solving a "real-world" mathematics problem. Such performances are also called "exhibitions." The progressive tradition has long advocated teaching and testing through "realistic" projects instead of through separate subject matters, and has long rejected tests that probe isolated knowledge and skills. Realistic performance assessments, it is claimed, have a number of advantages over multiple-choice tests, which include being more informative, more motivational, and fairer to minorities and nonverbal students. These claims are often plausible, particularly when performance tests are used as teaching and monitoring devices in the classroom context; for instance, in a course on writing, it is clearly preferable to use writing tasks as tests rather than to use multiple-choice tests. However, performance tests are only one of many monitoring devices in classroom teaching, and they have been shown to be ineradicably subjective and arbitrary in grading. They are not appropriate for large-scale, high-stakes testing because no one has been able, even in theory, to make such tests fair and accurate at reasonable cost in money and time. To serve democratic ends, American educators have pioneered the creation of fair and accurate multiple-choice tests that probe a wide variety of knowledge and skills. The consensus among psychometricians is that these objective tests, rather than performance tests, are the fairest and most accurate achievement tests available. Performance tests, while important as one tool for classroom use, should not play a decisive role in high-stakes testing, where fairness and accuracy are of paramount importance. (p. 243)

"Constructivism." A psychological term used by educational specialists to sanction the practice of "self-paced learning" and "discovery learning." The term implies that only constructed knowledge—knowledge which one finds out for one's self—is truly integrated and understood. It is certainly true that such knowledge is very likely to be remembered and understood, but it is not the case, as constructivists imply, that only such self-discovered knowledge will be reliably understood and remembered. This incorrect claim plays on an ambiguity between the technical and nontechnical use of the term "construct" in the psychological literature. Many readers may not be interested in the technical details, but those who are may wish to know that the misleading ambiguity arose as follows. Learning is closely associated with memory, since unrecalled experience cannot be said to be learned. For a long time it has been known that most memories are not just mechanical recollections but constructs built on a whole body of relevant prior experiences. (The constructed character of memory accounts for the unreliability of eye witnesses.) Another example of the constructed character of knowledge is the understanding of language. The meaning of what we read or hear is not transferred directly from one person to another but is constructed by the listener, sometimes incorrectly. Since memory and linguistic meaning constitute a lot of school learning, these two examples alone make plausible the idea that school learning is constructed. The misleading extension of the word to pedagogical method arises from the ambiguity between the idea that memories and word meanings are constructed and the idea that the only way to learn things properly is to construct or discover them for one's self rather than being told them. But since being told things is also a constructive, nonpassive process, the quasi-scientific claim that constructivism favors discovery learning is completely unfounded. In fact, experience has shown that "discovery learning" (which see) is the least effective pedagogical method in the teacher's repertory. "Constructivism" is a good example of the way technical terms are sometimes used to give progressive ideas a spurious scientific-sounding authority. For example, some educationists distinguish between "endogenous" and "exogenous" constructivism. "Endogenous constructivism" is a mystifying term denoting learning that is self-induced by the student; "exogenous constructivism," by contrast, denotes learning that is induced from the outside, usually by the teacher. But note that behind the ponderous rhetoric lies the tacit admission that both discovery learning and guided learning are constructed. This means that, in the end, the term "constructivism" adds little or no illumination. (p. 245)

"Critical-thinking skills." A phrase that implies an ability to analyze ideas and solve problems while taking a sufficiently independent, "critical" stance toward authority to think things out for one's self. It is an admirable educational goal for citizens of a democracy, and one that has been advocated in the United States since Jefferson. The ability to think critically is a goal that is likely to be accepted by all American educational theorists. But it is a goal that can easily be oversimplified and sloganized. In the progressive tradition that currently dominates our schools, "critical thinking" has come to imply a counterpoise to the teaching of "mere facts," in which, according to the dominant caricature, sheeplike students passively absorb facts from textbooks or lecture-style classrooms. Critical thinking, by contrast, is associated with active, discovery learning and with the

autonomous, independent cast of mind that is desirable for the citizens of a democracy. Conceived in this progressive tradition, critical thinking belongs to the formalistic tool conception of education, which assumes that a critical habit of thought, coupled with an ability to read for the main idea and an ability to look things up, is the chief component of critical-thinking skills. This tool conception, however, is an incorrect model of real-world critical thinking. Independent-mindedness is always predicated on relevant knowledge: one cannot think critically unless one has a lot of relevant knowledge about the issue at hand. Critical thinking is not merely giving one's opinion. To oppose "critical thinking" and "mere facts" is a profound empirical mistake. Common sense and cognitive psychology alike support the Jeffersonian view that critical thinking always depends upon factual knowledge. (p. 247)

"Culturally biased tests." A phrase expressing the claim that many standardized tests, such as the SAT, are culturally biased. The claim arises from the fact that different cultural groups perform differently on the tests. The argument for bias is based on the following two correct premises: the innate abilities of the different cultural groups (as with all large groups) are similar; the groups have experienced similar schooling. From these two premises can be derived the conclusion that, since the innate abilities and the schooling of the groups are similar, and since the test results are dissimilar, the tests must contain hidden bias. The argument is reasonable, but it does not exhaust the logical possibilities, or even the probabilities. For instance, different cultural groups might attain different levels of actual achievement from the same schools if their home cultures have not prepared them for mastery of the school-based culture and the subjects taught within it. The differences in group performance on tests raise two distinct questions:

1. Are the tests themselves technically biased? (If so, everyone agrees they must be changed.)
2. If the tests are not technically biased, what policy decisions should be taken in light of the different group performances on the tests?

As described by the American Psychological Association, technical bias is indicated by a consistent difference between the way a group performs on a test and the way it performs on some real-world criterion that the test is meant to measure. Most current standardized tests are free of technical bias in this sense—which leaves open the policy question regarding what to do about different group performances on these tests. Blaming unbiased tests for bias is not a plausible solution. (p. 249)

"Discovery learning." The phrase refers to the teaching method which sets up projects or problems so that students can discover knowledge for themselves through hands-on experience and problem solving rather than through textbooks and lectures. Progressivists made discovery learning the chief or exclusive form of teaching starting with the "project method" (which see.) The premise is true that knowledge acquired on one's own, with difficulty and by expending lots of time and effort, is more likely to be retained than knowledge presented verbally. It is also true that knowledge gained in a realistic context as part of an effort to solve a problem is likely to be knowledge that is well understood and integrated. Unquestionably, then, discovery learning is an effective method—when it works. But there are two serious drawbacks to preponderant or exclusive reliance on discovery learning. First, students do not always make on their own the discoveries they are supposed to make; in fact, they sometimes make "discoveries" that aren't true. Hence, it is essential to monitor students to probe whether the desired learning goal has been achieved, and if not, to reach the goal by direct means. Second, discovery learning has proved to be very inefficient. Not only do students sometimes fail to gain the knowledge and know-how they are supposed to gain, but they do not gain it very fast. Research into teaching methods has consistently shown that discovery learning is the least effective method of instruction in the teacher's repertory. (p. 250)

"Drill and kill." A disparaging description of the pedagogical tool of drill and practice to teach children skills. Like the term "rote memorization," it is a good illustration of the pugnacious tone of some progressive rhetoric. The phrase implies that drill and practice kills the interest and joy children have in learning. At the same time, it implies that needed learnings will automatically be acquired in the ordinary course of schooling by using naturalistic pedagogy like "discovery learning," "thematic learning," and the "project method" (all of which see). The factual bases for these claims do not exist, and are invariably contradicted by the attitudes schools take toward pedagogy when it comes to athletics, a bizarre inconsistency in American schools. Authoritative scholars have felt it necessary to state that:

Development of basic knowledge and skills to the level of automatic and errorless performance will require a great deal of drill and practice. Thus drill and practice activities should not be slighted as "low level." They appear to be just as essential to complex and creative intellectual performance as they are to the performance of a virtuoso violinist.

This view is strongly supported by cognitive psychologists and neurophysiologists, who have shown that many skills require repeated experience and "distributed practice" to be learned. It is true that such practice ought to be made as interesting, as varied, and as motivated as possible through the art of the teacher. But the assumption that repeated practice can be successfully avoided, or that it can be sufficiently ensured by being embedded in naturalistic themes or projects, has been discredited. (p. 250)

"Hands-on learning." A phrase that implies the superiority of direct, tactile, lifelike learning to indirect, verbal, rote memorization. Multisensory learning is indeed an excellent method for integrating and fixing what a child learns, for instance, the use of tactile methods to help children learn the letters of the alphabet. (In one version of that method, children run their fingers over bumpy cutouts of the letters, and this hands-on experience, combined with visual perception and with hearing and pronouncing the names of the letters, helps connect the letter shapes to the names by multiple sensory means that reinforce each other.) Apprenticeship teaching, too, is an enormously effective, integrated, hands-on mode of learning a trade or profession. Caution must be expressed, however, regarding the polemical use of the term to support a single kind of teaching. Very often the term "hands-on" is an honorific term used to praise the progressivist "project method" of education and to disparage a "whole-class instruction," which is conducted mainly by visual and verbal means. Experience does not bear out the

superiority claimed for the project method in its various manifestations, called variously "discovery learning," "holistic learning," and "thematic learning." The research suggests that such methods are uncertain, unfair (not all children learn from them), and inefficient, and therefore should be used sparingly. Caution is especially required when the phrase "hands-on" is used to imply disdainfully that visual and verbal learning is artificial and unengaging. Antiverbal prejudices spell disaster for disadvantaged students, who have not been exposed to a breadth of verbal learning outside the school. In contemporary life, the verbal has a strong claim to being just as "lifelike" as the tactile. (p. 253)

"Higher-order skills." A phrase for the superior thinking skills that many current educational reforms aim to achieve. The goal is to produce students who can think and read critically, who can find information, who have mastered metacognitive strategies, and who know how to solve problems. Such students, it is asserted, will be far better prepared to face the challenges of the twenty-first century than those who merely possess a lot of traditional, soon-to-be-outdated, rote-learned information. Behind this contrast between higher-order thinking skills and lower-order information lies the formalistic tool conception of education, which has been repudiated by mainstream cognitive psychology. If in fact the learning of higher-order skills did suffice to produce critical thinkers prepared for the challenges of the twenty-first century, we and our students would be very fortunate indeed and could forgo a great deal of the hard work associated with gaining factual knowledge and well-practiced operational skills in reading, writing, and mathematics. Since, unfortunately, this tool conception is incorrect, the outlook for the effectiveness of such "reforms" is dim. Higher-order skills are invariably and necessarily conjoined with a great deal of relevant, domain-specific information. Hence, there is no way to gain the skills without gaining the associated information. It is mere prejudice to assert that the strategies associated with using domain-specific information are of a "higher order" than the knowledge itself. This fact has led some cognitive scientists to use the more neutral term "associated strategies" rather than "higher-order skills. (p. 254)

"Individualized instruction." An ideal in education that recognizes individual differences in talent, interest, and preparation. It is universally acknowledged that the individual tutorial is the most effective form of teaching known. Tutorial instruction is not possible, however, in public schools, where the student-teacher ratio is typically 20 to 1. For that reason, an attempt in the public schools to provide individual instruction to some students often results in individual neglect for others, in the form of isolated, silent seatwork. In typical schools, the best results for most individual students are gained not by one-on-one tutorials but by a predominant use of whole-class instruction, in which all students participate. This interactive, whole-class pedagogy is then supplemented by small-group, cooperative learning, by moderate individual seatwork, and by individual coaching. (p. 255)

"Individual learning styles." A phrase referring to the well-accepted fact that different students learn in different ways. The phrase is sometimes used to support an emphasis on small class size and individual attention to students, and as a nonjudgmental term for different levels of academic ability. The results of research on learning styles are decidedly mixed. The claims for different styles among different ethnic groups are disputed in the literature. There seems to be solid support for the idea that some students learn better through visual and verbal means than through verbal means alone. Effective teachers have always taught through a diversity of approaches, both in order to avoid boring students through obvious repetition and in the hope that different approaches will stick with different students. Since the only economically feasible and fair system of schooling is one that engages all students in a class most of the time (i.e., a system that employs a generous amount of effective whole-class instruction), one policy implication of different learning styles is that teachers should vary their teaching by using visual aids, concrete examples, and tactile experiences as well as verbal concepts in presenting what is to be learned. The open appeal to different learning styles, like the appeal to "individual differences," has been used as a disparagement of verbal learning and a rationalization for not achieving better results from inherently able but disadvantaged students. (p. 255)

"Less is more." This phrase is meant to imply that depth is preferable to breadth in schooling. In some circumstances, the idea is certainly true, but the catchiness of the paradoxical formulation should not be permitted to mask the doubtfulness of the idea as a general proposition that can reliably guide teaching or curriculum making at different levels of schooling. The motto is generally valid in one limited respect: selectivity of knowledge is important at all levels. But the balance between breadth and depth in schooling is a perennially thorny issue that is not to be disposed of by a simple slogan, especially one that has all too often encouraged both teachers and students to slack off. If less is more, than skipping a subject altogether might begin to seem a virtue—an attitude not altogether foreign either to the progressive tradition or to many teachers who have been influenced by it. In general, contrary to the motto, breadth is preferable to depth in early schooling, where the child should be provided with a conspectus of the various domains of knowledge and experience so that new learnings can be readily integrated into his or her web of understanding and belief. In the later grades of high school and at the university, when a student has already secured a broad enough background to enable future learning in many fields, he or she should be encouraged to focus more narrowly and probe more deeply. In most cases, the balance between depth and breadth is a subject of a complex judgment that takes into account subject matter, the purpose, and the stage of schooling. (p. 255)

"Mere facts." The phrase "rote memorization of mere facts" may be the most vigorous denunciation of "traditional" education to be found in the progressive armory. The phrase describes an activity that compounds deadly pedagogy (i.e., rote memorization) with deadly content (i.e., mere facts). In Romantic progressivism, facts are dead, but hands-on, lived experience is alive; facts are inert and disconnected, but understanding is vital and integrated. The nineteenth-century romantic William Wordsworth once said that we "dwindle as we pore" over facts "in disconnection, dead and spiritless," and he urged us to see facts imaginatively. For his American successors, mere facts are always disconnected, dead, and spiritless. Their "mereness" implies their inherent disconnection and artificiality. As soon as real "understanding" occurs, however, mere facts are transcended. There is some validity in this conception, as there usually is in most views that are long and widely held. Understanding does mean connecting facts; isolated facts are meaningless. Where the progressive-Romantic indictment of facts falls short is in the exaggerated idea that facts which are not directly and immediately connected with one's life are inherently fragmented and dead. That blanket accusation amounts to an antiverbal, anti-intellectual distortion. Facts are absolutely necessary to understanding. Whether they are dead and fragmented depends upon teachers and students, not upon the facts themselves, which are not only required for understanding but are sometimes immensely vital and interesting in their own right. (p. 259)

"Metacognitive skills." A term that, like "constructivism," has a legitimate technical but an illegitimate nontechnical meaning. The illegitimate, broader application of the term identifies it with "accessing skills," "critical-thinking skills," "problem-solving skills," and other expressions of the antiknowledge tool conception of education. The narrower, technical meaning has useful application. Technically, in the scientific literature, "metacognition" means a self-conscious awareness of one's own procedures in performing skilled activities. ("Meta" means "after" or "beyond" in Greek.) For instance, in solving math problems, a skilled mathematician might think, "First I'll estimate the range within which the right answer is going to fall so that I can be more confident I am going at this right and didn't make a clerical error." Or a good reader could silently think, "I wonder what this text is mainly trying to convey. Knowing that will help me fit in the individual parts I am reading." Such self-conscious monitoring of one's own activities is characteristic of expert performance. Children who have learned how to set and meet such study goals for themselves (e.g., how to scan a text for the main meaning, how to decide on what is more or less important in a subject with respect to their own study aims) are students who are better able to work independently. Such study skills should clearly be encouraged where this can be done effectively without displacing or distracting from solid subject-matter knowledge. The teaching of such self-conscious monitoring can speed up the learning of reading and problem-solving skills. But since expert skills are also dependent on domain-specific knowledge, the teaching of metacognition in this narrow sense is recognized as a useful but not sufficient help in learning a skill. (p. 259)

"Multiple intelligences." A phrase popularized by the psychologist and author Howard Gardner. It is meant to replace the concept of IQ (a single general intelligence) with a theory of seven domains of ability under which almost every child can be good at something. The seven domains are linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal. Neither Gardner's specific taxonomy nor his general interpretation is widely accepted by the psychological community. Nonetheless, specialists and laypersons alike concede Gardner's general point that people are better (more "intelligent") at some activities than at others. Despite the fact that schools are not competent to classify and rank children on these highly speculative psychological measures, the concept has become highly popular, probably because it fits in with the already popular notions of "individual differences," "individual learning styles," "self-paced learning," and so on, not to mention its appeal to our benign hope for all children that they will be good at doing something and happy doing it. The distinguished psychologist George A. Miller has said that Gardner's specific classifications are "almost certainly wrong." Miller gets to the educational heart of the matter when he observes that even if the classifications were right, no descriptive theory of multiple intelligences could tell us what policies and methods schools ought to pursue. Should they accentuate students' strengths, overcome their weaknesses, or both? The common-school tradition of Horace Mann (with which Gardner would probably agree) implies that we should both encourage students' strengths and overcome their weaknesses, especially in those competencies such as literacy, numeracy, and general knowledge which enable their effective participation in the economic and political life of the nation. Once those common goals are agreed upon, psychological classifications would seem to have little function beyond the encouragement of respect and egalitarianism—admirable virtues that do not require the support of psychological speculation. (p. 260)

"Outcomes-based education." A term of uncertain meaning which during the 1990s became a symbolic cause of verbal war between political liberals and conservatives. It is best understood historically. In the late 1980s and early '90s, in the midst of public discontent with students' test scores in reading and math, some professional educators proposed that schools pay relatively less attention to methods of schooling, such as discovery learning, and more attention to results. They labeled this idea "outcomes-based education." Their goal was to correlate teaching methods more closely with results. The label stuck, but the idea behind it subtly changed in the early 1990s, when committees of teachers and administrators gathered to define what outcomes were to be achieved. Because of the general antipathy in the educational community to an emphasis on facts, subject matter, and content, the outcomes drafted by these committees tended not to emphasize knowledge so much as various tool metaphors for education and virtue in the form of democratic attitudes and emotions. These included respect for all people, including people of diverse races, religions, and sexual orientations. It was this last idea, and similar socially liberal notions, which raised red flags with conservatives. Thus the battle began, with the term "outcomes-based education" being viewed as a left-leaning conspiracy. It could also be viewed as the transformation of a reasonable idea into impractical vagueness through progressivist antipathy to subject-matter knowledge. (p. 262)

"Passive listening." A progressivist phrase caricaturing "traditional" education, which makes children sit silently in rows in "factory-model schools," passively listening to what the teacher has to say, then merely memorizing facts through "rote learning," and finally "regurgitating" the facts verbatim. If this picture really did characterize whole-class instruction, progressivists would be right to reject it. But observations of "whole-class instruction" (which see) in the United States and elsewhere provide a very different, far-from-passive picture of what children are actually doing and learning in whole-class instruction. The caricature is another example of the way a valid point gets carried too far through simplistic slogans, causing teachers to become polarized and to reject sensible practices. The implication is that whole-class instruction makes the teacher boss instead of friendly coach, leads children to become docile and unable to think for themselves. Progressivists claim that this docility is just what traditionalists want to achieve, whereas progressive methods will produce independent-minded, active students who think for themselves. To the extent that more "active" methods like "discovery learning" provide children with less factual knowledge on which to base independent judgments, the claim to produce independent-mindedness seems doubtful. (p. 262)

"Portfolio assessment." A phrase for a version of performance-based assessment. In portfolio assessment, students preserve in a portfolio all or some of their productions during the course of the semester or year. At the end of the time period, students are graded for the totality of their production. It is a device that has long been used for the teaching of writing and painting. But there its utility ceases. It has proved to be virtually useless for large-scale, high-stakes testing. (p. 263)

"Research has shown." A phrase used to preface and shore up educational claims. Often it is used selectively, even when the preponderant or most reliable research shows no such thing, as in the statement "Research has shown that children learn best

with hands-on methods." Educational research varies enormously in quality and reliability. Some research is insecure because its sample sizes tend to be small and a large number of significant variables (social, historical, cultural, and personal) cannot be controlled. If an article describes a "successful" strategy, such as building a pioneer village out of Popsicle sticks instead of reading about pioneers, the success may not be fully documented, and the idea that the method will work for all students and classrooms is simply assumed. There are strong ethical limits on the degree to which research variables can or should be controlled when the subjects of research are children. Many findings of educational research are highly contradictory. Greatest confidence can be placed in refereed journals in mainstream disciplines. (A refereed journal is one whose articles have been checked by respected scientists, or referees, in a particular specialty.) Next in reliability is research that appears in the most prestigious refereed educational journals. Very little confidence can be placed in research published in less prestigious journals and in nonrefereed publications. The most reliable type of research in education (as in medicine) tends to be "epidemiological research," that is, studies of definitely observable effects exhibited by large populations of subjects over considerable periods of time. The sample size and the duration of such large-scale studies help to cancel out the misleading influences of uncontrolled variables. An additional degree of confidence can be placed in educational research if it is consistent with well-accepted findings in neighboring fields like psychology and sociology. Educational research that conflicts with such mainstream findings is to be greeted with special skepticism. The moral: Print brings no reliable authority to an educational claim. When in doubt, ask for specific references and check them. Many claims evaporate under such scrutiny. (p. 265)

"Rote learning." The phrase "rote learning" is often followed by the phrase "of mere facts." The practice of rote learning dates back to the now-little-used method of asking a whole class to recite in unison set answers to set questions—whether or not the students know what their recitations mean. That practice has all but disappeared. When present-day educators have been asked what they now mean by the phrase "rote learning," they respond variously that it means "spouting words" without understanding their meaning, or memorizing items without understanding them, or learning a lot of isolated facts. They object that rote memorization breeds a passive and uncritical attitude in students, who, as we all hope, will grow up to be independent-minded citizens. All of these objections to rote learning have validity. It is better to encourage the integrated understanding of knowledge over the merely verbal repetition of separate facts. It is better for students to think for themselves than merely to repeat what they have been told. For all of these reasons, rote learning is inferior to learning that is internalized and can be expressed in the student's own words. These valid objections to purely verbal, fragmented, and passive education have, however, been used as a blunt instrument to attack all emphasis on factual knowledge and vocabulary. Some purely rote learning is, for example, indispensable to learning the words of one's own language, since there is rarely a nonarbitrary reason why particular names are attached to particular things in the world. Nor is there any very meaningful reason why English spelling should use "i" before "e" except after "c" or when sounded as "a" as in "neighbor" or "weigh." Or why "thirty days hath September." Yet it is highly useful to rote-learn those and many other helpful facts. The way things have been learned, whether by rote or other means, very often drops entirely out of memory. Psychologists distinguish "episodic" memory, which may be short-lived, and "semantic" memory, which is very durable. The episode of learning is insecurely stored in volatile episodic memory; hence, it often doesn't matter exactly how things are learned, so long as they are learned. In the progressive tradition, the attack on rote learning (timely in 1918) has been used to attack factual knowledge and memorization, to the great disadvantage of our children's academic competencies. (p. 266)

"Self-esteem." A term denoting a widely accepted psychological aim of education. There is consensus in the psychological literature that a positive sense of one's self is of great value to achievement, happiness, and civility to others, whereas a negative sense of one's self leads to low achievement, discontent, and social bitterness. The critical question for school policy and teaching is how far on average self-esteem can be induced by positive reinforcement on the teacher's part. There is agreement that some degree of positive reinforcement is necessary, and that teachers should be kindly and encouraging to all students. But there is growing agreement among psychologists that verbal and affective reinforcement is not sufficient, and can in fact be counterproductive if the child is not persuaded. There is strong evidence in the mainstream literature that praise in the absence of achievement does not raise achievement. The best enhancements of self-esteem, according to both psychological and process-outcome literature, arise from accurate and matter-of-fact appraisals of a student's work, as well as realistic encouragement toward effort and actual achievement. (p. 267)

"Whole-class instruction." A neutral description that has negative connotations in the progressive tradition, since it is understood to imply "lockstep," "factory-model" education. It is caricatured by an authoritarian teacher droning on at the head of the class, or by passive, bored students, barely conscious and slumping in their seats, or by intimidated, fearful students, sitting upright and willing only to parrot back the teacher's words. These are not accurate descriptions of what effective whole-class instruction is. It is predominantly interactive, with much interchange between students and teacher; it makes frequent use of student performances and student comments on the performances; it involves consistent informal monitoring of the students' understanding; it engages all students by dramatizing learning in various ways. An overwhelming concurrence of reports from process-outcome studies shows that a predominant use of whole-class instruction constitutes the fairest and most effective organization of schooling. The attempt to sidestep whole-class instruction, and to provide individual tutorial attention in classrooms of twenty to thirty students, results in individual neglect. It has also been shown that an interactive mode of dealing with the whole class is the liveliest and most effective approach to teaching, and that it is useful to vary the mix with some amount of individual coaching, cooperative learning, and seatwork. All these other approaches should be used within a well-organized whole-class context in order to achieve the best and fairest results. (p. 270)