53. John Burgoyne, "Curricula and Teaching Methods in Management Education," in *Education for the Professions*, ed. Goodlad, pp. 141–147, esp. p. 146.

54. Polanyi, *Personal Knowledge*, p. xiii.

55. Van Cleve Morris, "Who Knows What's Really Going On? The Phenomenological Crisis in Teacher Education," in *Responding to the Power Crisis in Teacher Education*. Papers presented at the 1971 conference of the Society of Professors of Education, Chicago. (Washington, DC: Society of Professors of Education, 1971), pp. 64–74, esp. pp. 65, 68, 70, 72.

56. Polanyi, *Personal Knowledge*, p. 54.

57. See, for example, Jill McCalla Vickers, "Memoirs of an Ontological Exile: The Methodological Rebellions of Feminist Research," in *Feminism in Canada*, ed. Geraldine Finn and Angela Miles (Montreal: Black Rose Books, 1982).

58. "Major Trends in Research: 22 Leading Scholars Report on Their Fields," *Chronicle of Higer Education* 31 (September 4, 1985): 12–14, 18.

59. The claim is that "faculty ask better research questions, use more externally valid research methods, and interpret their findings more fully than when they do not collaborate with teachers. Teachers more fully understand and appreciate the strengths and limitations of their own practice and they become more receptive to new ideas and more analytic about applications of those ideas than when they do not collaborate with faculty on research." *IRT Communication Quarterly* (Michigan State University) 9 (Fall 1986): 1.

60. Harold Rugg and George S. Counts, "A Critical Appraisal of Current Methods of Curriculum-Making," in *Curriculum-Making: Past and Present*, ed. Whipple, 425–447, esp. p. 438.

61. Dan Lortie makes the point that such courses as "torts" or "internal medicine" have their origins in the problems of practice, not in the experiments of researchers. Teaching has not produced such codified, cumulative professional knowledge because it has failed to capture practitioner knowledge. Dan C. Lortie, "The Robinson Crusoe Model of Teacher Work Socialization" (paper prepared for the New York conference of the National Commission on Teacher Education and Professional Standards, National Education Association, 1965).

62. Burgoyne, "Curricula and Teaching Methods in Management Education," p. 147.

63. J. J. Findlay, "The Problem of Professional Training: Recent Movements in Germany and England," *School Review* 1 (May 1893): 281–290, esp. 283.

2

Teaching Practice: Plus Que Ça Change . . .

David K. Cohen

Americans always have been hopeful about education. But they also have been deeply divided about how best to promote it. Horace Mann, Catherine Beecher, and legions of other nineteenth-century school boosters were convinced that education would flourish in state-maintained schools. They believed that such schools could turn a rough and divided collection of peoples into a self-governing political community. Among other things, they worried about urban crime, Irish immigrants, delinquent children, uneducated teachers, and how to teach the political knowledge required if a popular democracy were to work. Some of these school boosters wrote in a sunny, hopeful voice; others were mean and fretful. Few paid much attention to teaching and learning: They assumed a simple pedagogy and that children would learn what they were taught. Partly because of this last assumption, they saw schools as a powerful creative force. They believed that compulsory public schools could make over an ignorant and unruly people and thereby redeem a threatened democracy.[1]

But many other Americans had a radically different vision of education. J. F. Cooper, Mark Twain, and other Romantics saw

education as a do-it-yourself proposition, carried out alone or with a few friends. They depicted education as an adventure, a collision between untamed impulses and real experience. More often than not, these adventures were played out in tough and lonely struggles to learn the wild country. But if the Romantics attended closely to learning, their conception of teaching was modest. In fact, the only real teachers in this tradition were the learners themselves, as they struggled with an unforgiving nature of unyielding masters. In Twain's lovely story of learning to become a Mississippi riverboat pilot, he notes that, although he learned from master pilots, he had no teachers.[2]

Because they saw education as a solitary adventure, these Romantic writers were great school haters. They saw the nation's spreading public schools as the antithesis of education because schools replaced compelling adventures with boring, formal instruction. Schools shifted the locale of learning from the wild country to slates and books. Learning from oneself, from those who knew the country, and from the country itself was giving way to learning from people who hardly knew anything—teachers, many of them women. The promise of schooling was of formal and rigid "sivilization," sure to stifle that wild spirit that the Romantics celebrated in America.[3] None of the great school haters ever took up a crusade against formal education; they much preferred to celebrate innocent learning rather than to denounce arid institutions. But if we believe such contemporary accounts as Edward Eggleston's, the literary objections to schools that I have sketched had broad popular roots.[4]

These two educational traditions remained more or less distinct during most of the nineteenth century. They still have lives of their own today. One is visible in the persistent "boosterish" belief that formal education can patch any gash in the social fabric. The other is evident in a still popular romanticism of real experience, and in a lively contempt for those who know only books and can only teach. But late in the last century, John Dewey changed everything for American education when he joined these two divergent faiths. He announced that the innocent education, which the Romantics had celebrated, could occur in the schools that they had damned. He argued that public schools, boosted for their power to put a common stamp on rebellious outsiders and rancorous strangers,

could nurture the risky, adventurous, quirky learning that Twain had found on the river.

This was Dewey's most astonishing idea: that education (in the Romantic sense) was possible in schools. It was not his alone, but he was easily its greatest apostle, and it may have been his greatest contribution. He drew on a stream of passionate school hating for his conception of learning and education, and like the other Romantics, Dewey was a good school hater. But unlike them, he hated only the schools that happened to exist. Unlike them, he was a tireless evangelist for the idea that existing schools could be redeemed, that schools could foster adventure and build on idiosyncracy. And unlike the earlier school haters, who had believed that the education they cherished would wither in the mere vicinity of formal instruction, Dewey insisted that it could flourish in schools. Indeed, he argued that education would be perfectly natural in schools, perhaps even easy. He devoted little attention to explaining why it had never happened before, but he seems to have thought that it was only because people had not decided that it should happen, and had not devoted themselves to the task.[5]

Dewey's synthesis of these two traditions offered Americans a new vision of what schools could do. They could harmonize real experience and academic learning. They could break down the walls between schools and communities. They could replace the arid regime of drill and practice with spontaneous discovery and excited learning. This vision implied an extraordinary new conception of teaching. Teachers would have to be knowledgeable about experience, academic knowledge, and learning, knowing these territories as well as mountain guides knew theirs. Teachers would then be able to devise ways for children to "adventure" their way to real knowledge: to rediscover science and technology for themselves, to reenact the essential history of the race, and to re-solve the great problems of human thought and history. Teachers would have to become a species of mental mountaineer, finding bridges between innocent curiosity and the great store of human knowledge and leading children in the great adventures from one to the other. Such teachers could make schools into places in which everyone would learn and love it. And, good small-town New England boy that he was, Dewey firmly believed that everyone could learn the same essential lessons in schools, even though they would pursue

somewhat different paths. Teachers would thus help turn Americans into a single people, competent and thoughtful, independent and cooperative.

This was an astonishing vision. It remarkably expanded the aims of schooling. It greatly broadened the schools' embrace to include the most contrary Americans: cowboys and Indians, children and scientists, haters of school and lovers of education. And it therefore radically reimagined the nature of teaching. Dewey's vision helped create a new faith in schools as innocent institutions, which may be one of our most distinctive inventions. His vision also gave a real boost to the still youthful tradition of innovative teaching on which he had drawn so heavily. The decades in which Dewey produced so much of his educational writing (1890–1910) also saw the flowering of many efforts to invent new instructional practices, to build the new education of which he wrote so often.

Despite that early flowering, the legacy of Dewey and his early allies has been oddly mixed. Many studies during this century have claimed that the innovations they championed have had slow and heavy going. Capping this line of work recently, Larry Cuban concluded that Progressive ideas about instruction have made only modest headway in practice, at best.[6] But if Dewey's new vision did not affect American schools as profoundly as many had hoped, it did have a great impact on Americans' view of schools and on ideas about how to evaluate them. When Mark Twain wrote *The Adventures of Huckleberry Finn*, the best that any good school hater could do was to write about the evils of schools and the virtues of stealing away from them into the woods or down to the river. But John Dewey taught that we could change schools, that we could bring our woods-and-rivers adventures into the classrooms, and enrich both in the process.[7] By fusing American traditions of hating and boosting schools, Dewey helped to set new standards for judging formal education. He helped to make it legitimate to expect intellectual adventure as a regular part of any neighborhood school.

Dewey's synthesis thus gave Americans something new and different to hate about schools: not just their sterility compared to woods and streams, but their failure to produce intellectual adventure in standard classrooms. His vision therefore gave new and potent content to America's old habit of school hating. Not surprisingly, this change in our ideas about what schools could do had

its effects on educators. School hating soon became a staple in the educational mainstream: Dewey's ideas helped teachers, administrators, and school reformers become articulate critics of schools' formality and traditionalism and their lack of adventure and excitement.

Another way to put all this is that Dewey helped create a new social problem: schools that refused to change or failed to change, schools that stuck to the bad old ways in spite of the good new education. This could not have been a problem for most of the nineteenth century because the chief changes that Americans desired from schools then was their expansion, and that occurred with great speed. But the lack of innovation began to become a problem at the end of the century, when Dewey and his allies helped convince Americans that schools could do things that had rarely been imagined for them.

These new ideas about what to expect from schools revised our views about what needed to be explained about them. For Twain and other school haters, what had needed to be explained was simple: How could such strange institutions exist in this wild and innocent land? How would they spoil it, and how quickly? But after Dewey, something new needed to be explained: Why did schools remain in their hated old condition? Given the new light, why did they not change?

Explaining Failure

I explore the answers offered thus far, in part because I doubt their adequacy and in part because I question the way the issues have been posed. Although there have been many efforts to change instruction, I restrict myself to a broad tradition of efforts to make teaching more adventurous, a tradition that embraces Dewey's progressivism, discovery learning, Jerome Bruner's ideas about learning, and most of the curriculum reforms of the 1950s. This tradition is not marked by doctrinal coherence or consistency, and adherents have fought with each other more than a few times. But considered against the broader background of American education, the tradition is distinguished by several crucial common beliefs: that school instruction can be exciting, and must be if children are to learn; that instruction also should be intellectually challenging,

that it must be attuned to children's ways of thinking, to their experience, and to their own efforts to make sense of experience, in order to be either challenging or exciting, and that some of the greatest intellectual adventures are to be found in the structure and content of academic knowledge. This is a tradition to which Dewey has made fundamental contributions. It is the tradition whose modest acceptance in schools many reformers have bemoaned. It is the tradition whose disappointing track record several researchers have tried to explain, and to which many other theories of innovative failure might apply.[8] I synthesize many explanations under four broad headings.

School Organization

One line of work has focused on school organization. Researchers have argued that America's decentralized system of educational government and our loosely jointed organization of schools give teachers enormous autonomy, even if their formal authority seems quite limited. When innovations launched elsewhere seem inconsistent with teachers' views of instruction, they have plenty of room to ignore, turn aside, pervert, or otherwise frustrate the innovations' intent and effect.[9] This line of argument is appealing; among other things, it paints a persuasive picture of schools' political and organizational situation. But it does not explain why teaching seems equally resistant to change in much smaller, more centralized, and tidy school systems, such as those of Australia, Singapore, or Great Britain. Nor does it explain why teaching appears to be very difficult to change in private schools and small colleges, whose organization and scale bear little resemblance to American public schools. So even if we find the argument from organization attractive, it seems inadequate to explain the relative immobility of teaching practice.

The Conditions of Teaching

A second explanation points to the circumstances in which teachers labor. Larry Cuban and others have noted that most schoolteachers must work with a curriculum that they did not devise, and often with materials they do not like, as a matter of local practice, state policy, or both. This restricts their opportunities to do things differently. They must accept a schedule that contains little flexibility for dealing with subjects and students and little time to prepare new lessons or reconsider old ones. These conditions further restrict their opportunities to change or improve their teaching. And their workloads are ordinarily quite heavy: Either they must offer instruction in a great range of subjects, or they must teach the same subject to many students. Many must additionally supervise extracurricular activities; monitor lunchrooms, hallways, and playgrounds; and fill out a small blizzard of forms. Most teachers simply do not have the opportunities or energy to try something new, especially if it is a demanding something. Finally, although their jobs are difficult and increasingly demanding, they usually are poorly paid and held in low esteem. This does not enhance teachers' inclination to take on the demanding new assignments that much innovation entails.[10]

Finally, many innovations ignore these conditions, from either ignorance or principled objection. Larry Cuban has argued, for instance, that most educational technology has not been widely adopted because it has been quite inflexible. Most schools had only one or two television sets, radios, movie projectors, or computer terminals. In the days before the Sony Walkman or the microcomputer, either everyone in a class used these technologies or no one did. Such rigidity meant that radio, TV, and films could not easily be adapted to classrooms in which there was any internal variation in students' work.[11] And studies of other innovations, like the new curriculums of the 1950s, showed that they were conceived and developed as self-contained packages, designed to be swallowed whole by schools and teachers. They were quite deliberately not adapted to the schools' curriculum or to teachers' concerns; this meant that rates of adoption were generally low and that the incidence of what sponsors viewed as misuse was relatively high.[12]

If these considerations account for the absence of much innovation in teaching, then one would expect teachers' work to be much more innovative when these conditions were absent. As a matter of fact, teachers in scores of colleges, universities, and private schools work under much different conditions than most schoolteachers. Their teaching loads are much lighter. They either make up their curriculum themselves, or they have a large role in devising them with colleagues. They have a great deal of time to prepare classes

yet to come and plenty of time to reconsider those just presented. They use the books and other materials they choose. They are rarely supervised or evaluated by anyone else. They have little paperwork and are held in higher esteem than teachers in the lower grades in public schools. For all of these reasons and others, then, their teaching should be appreciably different than what is observed in public schools—if the conditions of teaching cause what is observed in public schools. But virtually all reports on teaching in colleges, universities, and private schools suggest that it is remarkably similar to what is observed in public schools. Lecture and recitation are the rule. Many students are bored. Rote learning is the rule. When instruction is better at such places, it seems to be due to more selected and capable students and to teachers who know more about their subjects than to innovative pedagogy.[13]

I do not argue that teaching conditions have no effect on public schoolteachers' work. But these examples strongly suggest that these conditions are insufficient to explain the qualities in that work that have been so deplored by reformers or to account for teachers' resistance to adventurous instruction.

Flaws in Reform

A third explanation focuses on frailties in the reforms. One common view is that there have been inadequate resources to do the job: too little money, too few people, or both.[14] Another explanation points to heavy-handed administration, which frustrates reform by pressing it without consideration of teachers' concerns. Another points to rapid changes in political signals that dissipate the momentum of reform. Still another focuses on deficiencies in curriculum, in teacher preparation, and in technical support for reform.[15]

These are all arguments with understandable appeal for education reformers. And each is plausible, for at nearly any given time, reform has been hampered by such frailties. But if we step back a few paces, we can see problems with these explanations. Although public education does suffer with significant resource constraints, these have greatly diminished since World War I. Unit expenditures on education (adjusted for inflation) have grown astonishingly.[16] Class sizes have shrunk by nearly half. Books and other materials are abundant by any past standard and are much more lively and varied. Yet there is no evidence that change in instruction has become easier, or more rapid, as a result of these greatly increased resources. To persist with this explanation is thus to agree that practice will not change any time soon because there is no reason to expect even greater resource increases. Nor is it plausible to explain the slow pace of instructional reform with technical deficiencies, such as the lack of good alternatives in curriculum, good ideas about instruction, or good people in teaching or in teacher education. Many more improvements could be made in each of these areas, and others as well. But inherited patterns of instruction have persisted through the provision of the new curricula and other instructional improvements that reformers desired. They have persisted as well through dramatic improvements in the education of American teachers and in teacher education. If such past resource improvements had little or no apparent effect on teaching, how much more would be required to do the trick?

Incentives for Change

A fourth sort of explanation focuses on incentives. Free market economists and reformers of other persuasions have argued that incentives for innovation are weak because public schools are nearly devoid of competition. They are maintained by government grants and insulated from politics by layers of bureaucracy. As a result, schools are said to be relatively immune to pressures for performance.[17] Decisions about the adoption or use of innovations are not much affected by the organizations' need to survive or prosper, for schools will go on and salaries will be paid even if promising innovations fail or go untried.[18]

Whether or not markets for schooling would have the desired effects, other commentators have argued that the present organization of public schools creates disincentives for innovation in teaching. The U.S. school system is broadly inclusive, bringing in many students who care little for academic study. Community values typically support sports, socializing, and vocational learning over academic studies. These do nothing to enhance students' interest in intellectual pursuits or teachers' interest in inventive instruction. Virtually universal enrollment and compulsory attendance mean that education itself is an entirely ordinary and unspecial enterprise,

and this also weakens academic commitment. Weak internal standards for promotion and graduation reinforce the sense that education is unspecial. In addition, they permit most students to get through, and out, with little effort. These factors further weaken incentives for demanding teaching.[19]

There also are strong economic and social pressures to attend school and few legitimate alternatives for those who find school distasteful. Many school administrators respond to this situation by setting the highest priority on quiet, orderly classrooms rather than pressing for serious learning and inventive teaching. These priorities are generally endorsed by school boards. Even highly motivated teachers, faced with many students who have little commitment to academic learning, must work within social and institutional constraints that do little to mobilize and much to discourage such commitment. These conditions do not preclude inventive and demanding teaching, but they often make it quite difficult. It is especially difficult for teachers to press academic work on unwilling students, for the lack of alternatives to school, the many social and legal pressures for attendance, and community and official support for many nonacademic features of schooling have made it perfectly legitimate to attend school without attending to education. Teachers who urge hard work on such students are in danger of becoming troublemakers; if they elicit a disruptive response, it will be seen as their fault. Many teachers settle for minimal academic work as a way to secure peace and quiet from the uncommitted.[20]

These arguments offer a plausible account of the social and organizational circumstances within which most schoolteachers work. But they do not seem sufficient to explain the glacial pace of change in teaching. There are, for example, schools that present a very different picture with respect to incentives but in which teaching seems little different. Many private secondary schools are neither compulsory nor unspecial. Students choose to attend. They can be thrown out if they are disobedient. Their families pay fees. And there is evident student and faculty commitment to the school and each other. Yet the teaching in such places is often little different than in compulsory public schools.[21] Colleges and universities often present the same puzzle. Many of these institutions are relatively selective. None is compulsory. Attendance is far from

universal. Teachers are not responsible for student discipline. Many compete for students and funds in markets. Yet many students do minimal work, and many teachers require little in return for passing grades. Most teaching appears to be traditional lecturing, with little student participation. A great deal of it seems to be quite dull and to engage students minimally at best.[22] College and university teaching seems to have changed little during the course of this century. There is scant evidence that innovations designed to improve instruction have been adopted or used. Indeed, the evidence suggests less innovation here than in the lower schools. The argument from incentives is thus no more compelling than explanations that focus on the conditions of teaching, defects in reform, or problems of organization.[23]

What do these various explanations tell us about efforts to explain the slow pace of change in teaching? A first point is that the explanations have not been very compelling. Although each is plausible, there are equally convincing examples of traditional teaching that persists when the explanatory factors are reduced or removed. These explanations may point to conditions that support traditional teaching, but they seem insufficient to explain the existence of such teaching.

In addition, the explanations themselves seem odd in certain fundamental respects. For instance, each assumes that improvement and change are to be expected. Inquiries seek to explain the absence of change, to discern "barriers," "obstacles," or "impediments" to improvement. But where is it written that change will occur if only the "obstacles" are removed? It is easy to understand why such an assumption would be common among educators, in view of many reformers' insistence that "adventurous teaching" is possible anywhere. The idea that change is normal is particularly easy to understand among a people that embraces the idea of progress as avidly as Americans do. But why should researchers adopt these assumptions? Why should we accept that improvement is to be expected or that change is the normal state of affairs? It may seem un-American, but perhaps stability is to be expected in teaching. Instead of looking for barriers to change in educational practice, perhaps we should be exploring possible reasons for their persistence.

A related oddity is that each account assumes few barriers to

adventurous teaching within teaching itself. All focus on barriers outside of teaching, in its circumstances. Yet to believe that any teacher can produce such classes is not to decide how easy it would be. Would it be easy or difficult? One very curious feature of virtually all reformist writing about teaching, from Dewey to Bruner, is that no one has tried to answer this question. Indeed, no one has even considered it worth asking. Theorists who seek to reform the practice of teaching write nearly exclusively about the practice of learning, not about teaching. Dewey, Bruner, and others offered extended accounts of how children learn, or should learn, but they gave little attention to how teachers teach, how they should teach, or the nature of teaching practice. One reason for this curiosity is that these theorists seem to have thought that they were writing about teaching when they were writing about learning—an assumption that nearly all psychologists in education make. Once the rules or laws of learning were figured out, it was assumed or asserted that teachers would simply have to follow them, and children would learn. Or perhaps books written according to the rules would be put into students' hands, and they would learn despite teachers' ignorance of the rules. This helps explain why so few reformers ever inquired about the demands on practice that adventurous teaching would make: They simply assumed that teaching followed from learning, that their analyses of learning had cracked the problems of teaching. It also helps explain why there has been little inquiry into teaching as a practice: into the problems that must be solved, into the skills, knowledge, and other resources required to solve those problems, and related matters. Such omissions may have been plausible in the first blush of enthusiasm for reform, but they seem indefensible after many decades of evidence that adventurous teaching is rare.

A last peculiarity in the explanations considered here is that they all accept a relatively narrow scholastic focus. Researchers and reformers see the sources of immobility in teaching in the schools' social, political, and organizational circumstances. This is understandable in light of reformers' view that adventurous teaching can be had anywhere, that if such teaching does not exist, it is only because schools have not tried to produce it. And it is particularly plausible in a society saturated with professionalism, for faith in the power of professions to change and improve life often leads to a

narrowed focus on professional operations and agencies, in both research and reform. But it is no more self-evident that the main influences on instruction are to be found in schools than it is that the chief influences on health are to be found in hospitals and doctors' offices.

These points suggest several large problems in the ways that educators and reformers have seen the improvement of teaching and in the ways that researchers have explained the slow pace of reform. The problems have led me to reconsider both matters. And that has led me into the study of teaching practice in an effort to better understand the nature of this practice.

The Nature of Teaching Practice

Instructional Traditions and Reform

Contemporary instructional practices embody an ancient instructional inheritance. In this inheritance, teachers are active; they are tellers of truth who inculcate knowledge in students. Learners are relatively passive; students are accumulators of material who listen, read, and perform prescribed exercises. And knowledge is objective and stable. It consists of facts, laws, and procedures that are true, independent of those who learn; and entirely authoritative. These ideas and practices have deep and old roots in academic habit. By contrast, reformers have a very different picture of instruction. They see learning as an active process of constructing and reconstructing knowledge. They see teachers as guides to inquiry who help students learn how to construct knowledge plausibly and sensibly. And they see knowledge as emergent, uncertain, and subject to revision—a human creation rather than a human reception. These conceptions of instruction are a radical departure from inherited ideas and practices. They also are a relatively recent, still controversial, and very weakly developed product of modern intellectual culture.

Consider first the view that knowledge is purely objective—that it is discovered, not constructed. This notion has roots deep in medieval Europe. Recall that educated men of that age worked from hand-copied manuscripts that had survived the collapse of a glorious empire or found their way into Europe from more sophisti-

cated Eastern civilizations. Educated Europeans attached great esteem and authority to these rare, often sacred texts. They studied and copied them with great care, memorized and analyzed their contents with minute attention and considerable deference. In medieval reverence for the text, we find one source of later ideas about the objectivity and special authority of written knowledge.[24]

The Protestant Reformation strengthened this tradition, for reformers sought to get back to the holy old sources that the Church had monopolized and to reorient worship accordingly. Luther was probably more convinced of the absolute truth of holy texts than were the bishops of Rome and more committed to literal Bible study. Early Protestantism strengthened respect for the objectivity and authority of written knowledge, adding to medieval foundations on that point.[25]

Some heroic histories of science have held that such respect for intellectual authority was destroyed in the age of Newton and Voltaire. But the religious sources of respect for the authority of written fact endured for centuries. Most of Europe remained Catholic, after all, and the Counterreformation was not exactly a liberal movement. In addition, the individualistic fruits of the Reformation grew very slowly within most Protestant denominations: Most were state establishments in which orthodoxy was carefully guarded. Even in the more individualistic American colonies, literal reading, remembering, and reciting seem to have been the rule well into the nineteenth century. Little in the early modern history of religion eroded respect for the authority of written knowledge.

Early modern scientists did sometimes attack religious belief, but science did not destroy respect for intellectual authority. Scientists and philosophers in the seventeenth and eighteenth centuries worshiped a rational nature. They believed in the objectivity and authority of sciences that would open nature's lawful heart to investigators. The age of Newton and Voltaire began to replace reverence for the authority of revealed text or established church with reverence for the authority of objective and rational natural facts.[26] And as the facts of natural philosophy were discovered, they were written down in books. In an age in which scientific experiments were restricted to a tiny minority that had the required knowledge, time, and money, the best that literate men could do

was read. The written materials of science became a new doctrine. They were studied and recited as faithfully, and often as mindlessly, as the old doctrines. The revolutions of modern science of course radically changed the conception of knowledge, how it was derived, and where its authority lay. But these revolutions did little to disturb reverence either for the objectivity of fact or for the authority of the books in which facts resided.

During most of the modern age, then, there was little argument about the objectivity of knowledge, nor about the great authority of such knowledge, even though there was dispute about which sort of knowledge was true. In all of the European and American traditions, religious and scientific, knowledge was believed to be factual, objective, and independent of human distortion. Only very recently have these old and deeply rooted ideas been broadly questioned.

A second element in our old scholastic inheritance is the idea that teaching is telling. In medieval Judaism and Christianity, the teacher was a voice for authoritative knowledge, which originated elsewhere. He was a pipeline for truth. The teachers' assignment included codifying and clarifying established knowledge in written commentaries on texts, resolving in the commentaries disputes between authorities or among students, and passing knowledge on to students in tests and lectures. Teachers were the center of instruction.[27]

Teaching as telling appears to have survived early modern Europe more or less intact. Philippe Aries has shown that in a small circle of elevated families, more gentle practices of child rearing began to grow in the late middle ages or early modern era.[28] But the character of school instruction remained traditional, and formal instruction was limited to a modest fraction of the population.[29] Churches were the only institutions of popular teaching until the nineteenth century, and there seems to have been no more room for give-and-take with the laity in Calvinism and Lutheranism than in Catholicism.

Traditional instructional practices persisted through the Enlightenment. Although this may seem contradictory for an age of reason, nearly all schools began as religious establishments. Teaching was heavily influenced by the traditional pedagogy that teachers had seen as students in school, university, and church.[30] In addition, the Enlightenment view of mind as a blank tablet,

ready to be inscribed by experience, did little to dislodge the inherited idea that teaching was the didactic telling of truths.

The dominant Western traditions of teaching had a strong didactic cast, then, well into the nineteenth century.[31] In both religious and secular practices, teachers were persons of authority. They had special knowledge. Their task was to pass this knowledge on, intact, to students.

The notion that learning is a passive process of accumulation, a third element in our scholastic inheritance, was quite consistent with these views. The idea that people learn by listening, reading, practicing, and remembering made perfect sense in medieval Europe, when knowing meant taking possession of material already extant. The idea that quiet attention, obedience to teachers, and recalling and repeating material were evidence of learning was probably reinforced by early Protestantism.[32] In addition to their textual literalism, the new denominations were obsessed with human sinfulness. In Calvinist and Lutheran doctrine, growing up meant learning to control devilish impulses. Protestant doctrine portrayed upbringing as a contest for young souls in which didactic instruction and strict discipline were needed to tame the wild spirits. Children who wanted their own way were viewed as willful, disobedient, or devilish. Obedience was a sign of religious virtue.[33]

The qualities in children that have been celebrated in more recent traditions of pedagogical reform—independence of mind, spirited inquiry, and a willingness to strike out on one's own—were thus identified with sinfulness in early modern Europe. The new philosophies of the European Enlightenment reversed this view radically in one sense: Children were pictured as innocent rather than sinful. But childish minds also were portrayed as passive receptors; a powerful new instruction was needed to replace the old ecclesiastical messages. The idea that children could learn the right lessons, if only left to themselves, appeared only later.

All the extant evidence about instruction in the seventeenth and eighteenth centuries supports this account. Methods varied, but most teaching proceeded as though learning was a passive process of assimilation. Students were expected to follow their teachers' directions rigorously. To study was to imitate: to copy a passage, to repeat a teacher's words, or to memorize some sentences, dates, or numbers. Students may have posed questions in formal discourse,

and perhaps even embroidered the answers. But school learning seems to have been a matter of imitative assimilation.[34]

Compared with this venerable inheritance, traditions of reform were born yesterday. The notion that children have distinctive ways of thinking, and that they will learn better if these are taken into account, seems to have appeared in America only in the early nineteenth century. The idea spread in succeeding decades, but slowly. In the middle of the century, a few school reformers—Horace Mann and Bronson Alcott among them—argued for a gentler pedagogy and respect for children's uniqueness.[35] A few contemporary authors of teaching handbooks and school texts made similar arguments.[36] The new tradition was enriched by the importation of Froebel's ideas later in the century, by a growing volume of homegrown writing about a new pedagogy after the Civil War, by the establishment of a few normal schools dedicated to a gentler pedagogy, and by the growth of the child study movement.

By the time John Dewey began writing about education, about a century ago, new conceptions of childrens' thinking and learning were thus becoming more available. Instructional experiments also were reported more frequently. More than a few teachers must have had a brush with these notions, for the texts and handbooks went through several printings, and there were articles and reports in educational and popular magazines. In addition, some teachers attended the reformist normal schools or their summer institutes.

But these were early ripples, not a tidal wave. Turn-of-the-century reports from higher education and professional meetings suggest that the new ideas were far from common. And contemporary accounts of classrooms revealed that the gentler pedagogy had made at best small dents in traditional practice.[37] In addition, the new traditions had just begun to develop when educators were swamped by a real tidal wave: a deluge of elementary students, including huge numbers of immigrant children, washed into public schools late in the last century. One reason this slowed the new tradition of pedagogical experiment was that educators had to scramble simply to keep from sinking under the tide of bodies. Another was that most schools responded to the tide with batch-processing methods of instruction and school management.[38] On both counts, educational expansion created barriers to the progress of a new pedagogy that had not existed before.

Traditions of instructional reform developed further during the twentieth century, and the process continues today. The notion that learning is a process of active construction rather than passive assimilation, for example, is still quite novel. John Dewey advanced a version of this view in the early years of our century when he argued that school curriculums should encourage children to reconstruct the great heritage of extant knowledge by a process of guided reenactment. But he did so in an age when most scientists and fans of science pictured knowledge as solidly objective and enduring, when the reigning psychology pictured the mind as more a passive receptor than an active creator of knowledge, and when Dewey and other reformers agreed that most school learning was in fact passive—that students added nothing to it, even with what psychologists now term students' "misconceptions." The objectivity of scientific knowledge had not yet been called into serious question, and other limits on scientific understanding did not begin to appear until decades later. The more radical notion, that scientific knowledge itself is constructed, not simply discovered, that science is more a feat of disciplined imagination than of quarrying hard facts, has begun to gain some scientific acceptance only in recent years. And the idea that minds actively construct knowledge is only beginning to be explored in psychological research and to be broadcast in educated opinion (despite earlier philosophical intimations and announcements).

I have argued that recent efforts to make teaching more adventurous are a modest and contemporary chapter in a much larger and older story. Our struggles over Dewey's progressivism, discovery learning, and related reforms are only a few episodes in a great collision between inherited and revolutionary ideas about the nature of knowledge, learning, and teaching. The collision began only a few centuries ago, though with the wisdom of hindsight, we can now see some earlier intimations of recent ideas. In the perspective of this historic clash, recent reform ideas resemble early manifestos in a long revolution or fumbling first steps down an unfamiliar path. It seems possible or even likely that these episodes will turn out to be only the first chapters in a much longer saga. If so, we could expect to learn much more about both traditional and innovative instructional doctrines as the arguments sharpen and as some advocates on both sides try to practice what they preach. But

we also can expect that such learning from argument and practice will be slow. After all, efforts to sort out the intellectual content and practical implications of both traditions have only just begun, under the pressure of conflict and challenge. This is true even in the United States, the nation most deeply committed to the new pedagogy, where efforts to try the new ideas out in practice are isolated and fragmentary. Other countries, like France, Germany, or Spain, remain largely untouched by new instructional ideas and practices. It seems reasonable to suppose that we are working on the frontiers of this great change and are far from a mature grasp of what the new tradition implies for our understanding of instruction, let along for the practice of learning.

Social Organization of Practices

By itself, of course, the great age of one tradition or the youth of another proves nothing. Revolutions occasionally seem to sweep everything before them. But there is no sign of such a revolution in instruction, even though reformers have repeatedly proclaimed it. What is more, traditions of practice do not exist in an academic vacuum. All instruction subsists within social organizations, and they can affect the progress of new ideas and practices. Families, neighborhood gangs, and factory work groups are all organizations in which instruction occurs, almost all of it informal teaching and learning. Schools are another sort of organization, one that is dominated by formal instruction and scholastic learning. Reformers work on schools, but the extent of congruence between scholastic and informal instruction could influence the progress of reform. In addition, most schools are part of larger educational organizations that we call school systems. One way these systems can influence practice is by affecting the transmission of knowledge about practice—including critiques of inherited views, ideas about reform, and examples of improved practice. This is particularly salient to any discussion of reform because many changes in practice require new knowledge. The instructional reforms discussed here certainly do, at least so the reformers have argued.

Popular and Scholastic Practices. Many practices are organized as very distinctive specialties. Plumbing is an example. Few nonplumbers do much repair or installation. Entry to practice is generally

quite restricted. Legal requirements for municipal approval of repairs and installation often virtually mandate the use of master plumbers. And the tools of the trade are costly to acquire and not easily mastered. As a result, relatively few adults know much about plumbing, and few children learn much about it. Teaching also is organized as a specialized craft. There are restrictions on entry to practice. Becoming a teacher is fairly costly. The work is commonly conceded to be difficult. And there seems to be a good deal of specialized craft knowledge.

Despite these specialized features of teaching, there also is an extraordinary amount of unspecialized instruction. Most adult Americans are unlicensed teachers in a great range of matters. This work includes everything from such basics as teaching children language and the conduct of social interaction to such ubiquitous incidentals as teaching children and other adults how to ride a bike, drive a car, tune a television, or purchase groceries. The extraordinary amount of unspecialized instruction signals an equally broad range of unspecialized learning.[39]

It seems likely that we learn a great deal about teaching and learning from these popular practices. This matter has been little probed in academic research on teaching, but there is a good deal of indirect evidence.[40] Decades of study show that family and community influences on children's learning are more powerful than the schools' influences.[41] These results are consistent with evidence on the political attitudes that schools try to teach. Many studies show that family and community influences on the development of these attitudes in students outweigh those of schools.[42] In addition, children communicate among themselves about the content and methods of instruction, and there is plenty of evidence that they influence each others' academic learning. It seems likely that this pattern also holds for children's learning about teaching and learning. It is difficult to see how they could be so strongly influenced by community and family in the content of instruction and not also be influenced by the modes of instruction themselves. How could students learn from the message without learning from the medium?

What do children learn about teaching and learning from these popular practices? Systematic evidence is spotty, but it suggests that family and community instruction is mostly traditional. Studies of child rearing find that didactic instructional practices are very common. Parents are less likely, for instance, to explain than simply to tell children what to do. They are less likely to question than to command.[43] Studies of attitudes about education also find that traditional ideas and values, such as belief in strong discipline and acceptance of established authority, are very common.[44] These studies also show that traditional practices and attitudes are most common among less urbanized, more religious, or working-class or lower-middle-class Americans.[45] Children from these sectors of society are highly likely to arrive in school with well-formed and distinctly traditional attitudes about teaching and learning. Research on child rearing also shows that the parents who are most likely to employ elements of the new pedagogy at home, or to support it at school, are highly educated and cosmopolitan. But even these seem to be a minority of such parents: Most seem to have quite traditional ideas about what should be taught in schools and how. Finally, the relatively few schools that adopt the new pedagogy generally enroll children from unusually advantaged homes.

These points fit with my historical account of knowledge, teaching, and learning. Both suggest that the old scholastic inheritance has been transmitted at least as much by informal as by formal instruction. Philippe Aries, among other scholars, argues that this inheritance rests on popular practices of teaching and learning that are conservative in character and have been passed down unwittingly from medieval times.[46] These popular traditions have been slowly eroded by more cosmopolitan instructional ideas and practices in the last few centuries, but the old ways are still firmly established. One reason is that the new pedagogy seems to be rooted in a distinctively cosmopolitan and upper-middle-class style of family life, in which parental discipline is relaxed, in which children have plenty of money and free time and need not work, and in which personal independence is highly valued. The spread of the new pedagogy outside of school thus seems to depend at least partly on the expansion of both economic affluence and cosmopolitan moral and political values to new segments of the population. Although there has been some expansion of this sort, there is little evidence of great change. Most high school students still work, and a very large fraction do so for a significant amount of their time.

Most parents' attitudes about child rearing still seem to be quite traditional. Although prosperity has increased, income distribution has changed only slightly and inconsistently during this century.

Another reason for the slow spread of the new pedagogy is that it is a regular target of political attack. Pressure groups and public officials frequently press traditional ideas on school boards, administrators, and teachers. Parents often press them on schools when they find that they cannot understand their children's homework. Campaigns against frills, newfangled methods, and educational reform have been a recurrent feature of American school politics since the inception of public education. Many educators and local districts carefully avoid new ideas and practices, and teachers who might embrace them.

Most reformers have assumed that traditional instructional practices are rooted in teachers' bad habits, and that they are obsolete, boring, and stupid impositions on children. In a sense, this is not surprising—reformers have been broadcasting for roughly a century the idea that children are naturally adventurous learners who would be so in schools if traditional teachers would only get out of the way. But my account suggests that, more frequently than not, traditional teaching in schools echoes and reflects popular practices outside schools. If so, the conceptions and practices that reformers wish to replace are not simply the impositions of bad old boring teachers, as Dewey and most reformers since have asserted. The instructional practices that reformers wish to eliminate contain views of knowledge, teaching, and learning to which many parents, teachers, and students have deep loyalties. In many cases, it is the reform ideas and practices that are an imposition. What is more, these old views and practices can be reasonably defended (and have been, by I. L. Kandel and William Bagley, for instance), even if they are unpopular in many academic circles.

Reformers also have concentrated on schools in their efforts to improve instruction. They have tried to change teaching methods, texts, academic knowledge, and instructional organization. This too is unsurprising: Most reformers have been academics of one sort or another, committed by profession, if not experience, to the efficacy of academic work. They could hardly revise family life. Despite that, my account suggests that school instruction floats on

a sea of popular practices and that these practices have historica life of their own. It also suggests that popular instructional practic is largely traditional. Efforts to reform school teaching subsis within a society in which unspecialized and largely traditiona teaching and learning go on everywhere. The old scholastic inheri tance is passed across the generations, outside the stream of forma schooling, by families and communities, as well as inside it, b teachers and students. These popular instructional practices slo the reform of academic practice. It seems painfully—an professionally—short sighted to believe that our old scholasti inheritance could be easily or quickly changed merely by changin scholastic learning and teaching.

School System Organization. I noted earlier that another way i which social organization can affect instructional reform concern the transmission of knowledge about reform. School systems var considerably in their capacity to gather and transmit knowleg about practice, or the improvement of practice. Some systems (th United Kingdom, Singapore, and some states in Australia, fo instance) employ formal inspection as a way to collect and spread knowledge about good instructional practices among teachers and schools. Other school systems have no such avenues of internal communication. Some systems are large and decentralized, which makes communication difficult, other things being equal. Others are small and centralized, which can reduce barriers to the exchange of knowledge.

The organization of U.S. education generally seems to impede communication about practice. American schools sprawl over so large a country and are organized in such a decentralized and fragmented fashion that it may not be accurate to describe them as a system. Although there is plenty of communication within and around these schools, there appears to have been only sporadic and limited exchange of knowledge about practice and the reform of practice. Communication about progressive reforms has been especially limited.

Most of the intellectual inspiration for Progressive reforms of instruction has emanated from academic intellectuals in elite institutions of higher education. John Dewey, Jerrold Zacharias,

Jerome Bruner, W. H. Kilpatrick, and Theodore Sizer are among the leading figures in these traditions. They and many of their colleagues concerned with improving schools held posts at Columbia, Harvard, the University of Chicago, Massachusetts Institute of Technology, Brown, and other pinnacles of academic excellence. Institutions of this sort also are the sources of most academic research, whether in the sciences, the social sciences, or the humanities. They were the institutions from which much criticism of public education as mindless and boring was launched during the Progressive era, the 1950s, and the last decade or so. They were the intellectual source of the curriculum reforms of the late 1950s and the places in which most of the curriculum development was carried out. They also are the institutions in which the new cognitivist or constructivist psychology, presently regarded by many academics as a basic rationale for instructional reform, flourishes. These institutions are thus the center of the academic universe. Their faculties have great prestige.

But prestige does not easily translate into influence on practice. For one thing, precisely because these institutions are at the top, they are quite remote from the thousands of higher and lower schools in which nearly all teaching and learning occurs. One reason is that the social distance helps to preserve the great status of those at the top. Faculty hiring is an example. Graduate students trained in the best institutions tend to work in such places, but students trained elsewhere rarely find their way to faculty positions at the top. They much more often wind up in the sorts of less selective institutions from which they came. If graduate training is an influence on instructional practice, that influence rarely seems to cross the great divide of academic status that separates a few dozen research universities from thousands of lesser institutions.[47] And of course only a tiny fraction of public school teachers are graduates of the highly selective institutions at the top. Most schoolteachers are educated in unselective institutions in which mass education is the order of the day.[48] The education of faculty in lower and higher schools thus offers few ways for critics of traditional instruction in the great colleges and universities to influence teaching practice.

But even if we restrict ourselves to ideas about practice, the elite centers are less influential than their great prestige might suggest,

for these great institutions have devised a unique mission: research and the production of new knowledge. Their distinction is due partly to their faculties' discoveries and academic production and partly to their education of new producers and discoverers. But the mass of colleges and universities, and nearly all elementary and secondary schools, exist to teach, to provide day care, to prepare students for further specialized education and work, and to grant degrees. Producing new knowledge is not a major and often not even a minor part of their work. As a result, staying in touch with new knowledge that has been produced in the academic centers is not a high priority for their faculties. It is, in fact, superfluous for most purposes of life and work in the academic hinterlands. Some use it as a way of "keeping up" and staying in touch.[49] But for those who do not write—which is the huge majority of U.S. teachers, whatever their institution—it is a matter of personal preference, not occupational necessity. Most teachers in the academic hinterlands have no good reason save curiosity to consume faculty production from the central academic institutions. This restricts the influence of critical writing about traditional instruction, or research on instruction or learning, that is done at the great research universities.[50]

Another reason that the great centers of learning have contributed little to the reform of instructional practice is that their faculties are not known for great interest or accomplishment in this practice. Teaching is not the highest faculty priority at these universities, nor are many of them noted for excellence in instruction. Even the study and improvement of teaching is something that evokes either ambivalence or hostility from most faculty. In addition, most teaching in these places, excellent or not, is traditional lecture and recitation, as it is nearly everywhere in American higher education. All reports on instructional practice suggest that it is only infrequently either student centered or exciting. It appears that college and university instruction has changed little for generations.[51] So even if the barriers to the transmission of ideas or practices I have described were much more modest, the examples of pedagogy that faculty at the great universities presented would be little different from what their less eminent colleagues do.

In fact, only a handful of educational institutions, higher or lower, assign a high priority to cultivating the reforms of instruc-

tion discussed here. Bennington, Sarah Lawrence, Bard, and a handful of sister colleges are centers of such practice, as are Shady Hill, the Cambridge School, the Prospect School, and a few dozen other elementary schools.[52] This is a small and quite selective group of institutions; most are private, charge sizable fees, and admit only academically able students. They have succeeded in keeping traditions of student-centered practice alive for several generations, which has been no mean feat. But the circle of institutions has not expanded much during that time and may have contracted. In addition, only a few efforts have been made to educate new recruits in this sort of teaching.

So the great academic centers, from which the most potent attacks on traditional pedagogy have been launched, are not well situated to influence instruction in most educational institutions. Nor are they places in which the new pedagogy is particularly cultivated. Efforts to nourish that pedagogy are made in other schools, but they are few in number, selective in character, and small in influence. The social organization of U.S. schooling seems to reinforce traditional teaching and to retard the spread of reform ideas and practices. John Dewey might have seen in this situation those gulfs between theory and practice that he so often deplored, but the gulfs seem wider and their existence more settled now than when Dewey began deploring them.

From this perspective, Dewey and the other left-wing progressives resemble nothing so much as early missionaries. Like many people of the word, these emissaries directed their hopeful messages toward a strange and unfamiliar land. As such people often do, they assumed that preaching, along with a few examples of good works, would carry the day. The curriculum reformers of the 1950s were also academic missionaries. And like most of Dewey's allies, they chose to preach from their high home ground rather than to work in the strange lands they wished to convert. The word can be powerful, especially among those who live by ideas, such as academics at the great research universities, among them most of the early left-wing progressives and most current critics of traditional instruction. But much history and many studies reveal the very modest effect that doctrine—whether scientific or revealed—has on practice. It is not surprising that many reformers have seemed to cry in an academic wilderness.

Although some may find this account discouraging, I have not argued that reforms of instruction have failed or that they will. I have instead tried to place these reforms in a perspective that might be useful to both reformers and those who study such work. I argued earlier that those who seek to encourage adventurous teaching and learning work at the frontier of historic collision between traditional and innovative conceptions of instruction. And I argued that reformers also work at the edges of deep social divisions: between a few agencies that offer scholastic instruction and many that instruct informally and often traditionally and between the few select centers of innovative instructional thought and practice and the great mass of unselective agencies of teaching and learning.

Estimates of historical position and social situation are always imprecise and often contested. But if one can never know certainly where one stands in history or society, one always makes estimates, thoughtful or not. And one often acts accordingly. Different estimates can yield very different conceptions of what is possible and what is to be done. These matters have rarely been discussed in the movements for instructional reform, at least partly because reformers unthinkingly assumed that victory would quickly be theirs. They have assumed that they worked close to the culmination of a great but swift change, that history was not only on the side of reform, but was pressing vigorously at its back. My argument, that the advocates of adventurous instruction work on new historical and social frontiers, leads to some rather different views about the nature of reformers' work and the problems that reformers face. My account implies that reformers are probably working near the beginning of a great, slow change in conceptions of knowledge, learning, and teaching and in a time of instability in ideas on all these matters. Those who begin a long revolution have different tasks than those who conclude it. The early work calls for exploration of alternatives, invention of many forms knowing that only a few may succeed, experimentation, and creation of examples that suggest the possibilities for change. One task is to develop a durable strategy of reform. Another is to create a tradition of change. Another is to nourish the knowledge and commitment that may sustain both. Still another is to probe what may seem an overwhelming opposition, to discern its weaknesses and strengths,

and to use that knowledge in shaping strategies for further change. But at the end of a long revolution there is little time for exploration, experimentation, and invention. The top priorities are to take possession of disputed institutions, to consolidate power and ideology, and to dispose of old enemies.

Different estimates of historical position also yield various evaluations of the success of reform. It would be unwise to assess the beginnings of a revolutionary movement in terms appropriate for its conclusion, among other reasons because that could only create an illusory sense of failure. But there is reason to suspect that this has happened in American research on instructional reform and that it has had just such defeating effects. Researchers have for the most part simply accepted reformers' assumption that adventurous teaching would be easy because adventurous learning was natural. There has been little discussion of what standards of success and failure to apply. The Romantic view that the new teaching would be sweet, and its success swift, has contributed to the conclusion that instructional reform has been slow and has perhaps gone sour. Our understanding of instructional reform, and reformers' work, might profit from more exploration of these frontiers and the nature of work on them.

Teaching Practice and the Risks of Reform

I noted earlier that there has been little analysis of teaching as a practice. Although many researchers have studied teaching, few have considered the nature of this practice. Few have explored the distinctive features of teaching or compared this practice with others. Few have tried to figure out what the key problems of this practice are. Few have tried to understand what sorts of resources—skill, knowledge, and others—are useful in solving those problems. Many useful perspectives have been brought to bear on teaching, but few have tried to cultivate a perspective that is rooted in the distinctive features of this practice.

In addition, the Romantic assumption that adventurous learning is natural has kept most advocates and students of reform from trying to understand what the new instruction might require of practice. Though reformers have deplored the sad state of teaching in American public schools, they have seen no great obstacles to

improvement. They have argued that teachers simply had the wrong books, used the wrong methods, worked under the wrong conditions, or had the wrong sort of education. Like most good school haters, reformers have assumed that the problem lay in bad institutions or in the nasty old past. Once the institutions were changed, or curriculum pointed in the new direction, children and teachers could adventure off together. Everyone believed that such teaching would be very different, but hardly anyone thought it would be very difficult.

The intellectual designs of research and reform have therefore embodied a sort of mutually reinforcing blindness. Few reformers have probed their own program in ways that would have allowed them to understand its intellectual content or its implications for practices of teaching and learning. And few students of teaching have considered this practice in a way that would give them a basis for understanding—or even a curiosity about—the demands that reform would make.

Teaching: An Impossible Profession. Teaching is a practice of human improvement.[53] It promises students intellectual growth, social learning, better jobs, and civilized sensibilities. Teaching is one member of a modest but growing family of similar practices psychotherapy, organizational consulting, some parts of social work, and sex therapy are a few others. Practice in all of them is quite unique. Practitioners try to produce states of mind and feeling in other people or groups by direct work on and with those they seek to improve. Emotional peace is one example of the results sought, and knowledge of arithmetic is another. Others include organizational effectiveness, improved management, or refined enjoyment of sex.

These ambitions, and the practices that embody them, are distinctively modern. Practices of human improvement are children of the belief, invented only recently in human history, that humanity can make itself over, that individual and social problems can be solved by the application of human expertise. These practices are living testimony to our faith that ignorance, poverty, corruption, anxiety, and other problems that have plagued humanity for time out of mind will yield to organized knowledge and skill.

Practices of human improvement thus embody, in many small ways, the great problems of defining and delivering human progress and of deciding about the adequacy of what has been achieved. These are problems with which most modern governments have wrestled painfully, inconclusively, and often at great cost in time, money, hope, and even lives. They are among the chief problems with which the great modern social theorists and philosophers have grappled, with less effort and cost but no more settled results. Regardless of this mixed and difficult record, practitioners of human improvement must solve and re-solve their modest versions of these same problems many times a day in classrooms, clinics, consulting sessions, and other settings.

Practices of human improvement are therefore inherently problematic. Practitioners in them of course have much to do that is ordinary and even mundane. But their work brings them face to face with some of the most distinctively modern problems: the meaning of progress, the means of achieving it, and the difficulties of knowing what we have done, how well, and how we did it, among others. These practices all are what Janet Malcolm called impossible professions, though she wrote only of psychoanalysis.

Why? Wherein lies the impossibility? It arises from the great difficulties of deciphering and delivering human salvation. These difficulties appear in three problems that lie at the heart of all these practices. One is that although they promise personal betterment to clients, the nature of these improvements is uncertain. The means of producing them are unsteady and often mysterious. There usually is considerable conflict, inside practice settings and outside them, about both the nature of improvement and the ways to achieve it. The practitioners' assignment is thus to produce what they typically cannot define with any precision, and to do so in spite of their frequent inability to be sure how results are produced when they are or to know why things go awry, as they often do.

Not all improvements are equally uncertain. Behavior therapists attack obesity, smoking, drinking, and other troublesome habits with relatively clear and simple results: weight loss, an end to smoking, decreased alcohol consumption. Such definitions of results make it possible to frame treatments that also are relatively clear and simple: schedules of predictable positive reinforcements for reducing the unwanted behavior and negative reinforcements

for indulgence. By contrast, traditional psychotherapists and analysts define the results of their practice in more complex and ambiguous terms: understanding the sources of fatness or the causes of smoking and drinking and coming to terms with the problem. This may mean losing weight, but it might also mean accepting oneself as stout. Such relatively complex and ambiguous results lend themselves to equally complex and ambiguous treatments: probing early experience in order to uncover the source of problems, reliving early feelings about problems by both recalling them and projecting them onto the therapist or analyst, making the old problems lively in the present, providing material to work through toward a more fruitful personal development.

Although uncertainty and dispute attend all conceptions of human improvement, then, the ends and means of each practice of human improvement can be defined in ways that reduce or increase uncertainty. One way to affect the difficulty of practitioners' work is to manipulate the degree of uncertainty in its results. Individual practitioners and clients often regulate their work together in this way, and sometimes entire streams of practice are similarly regulated.

A second general problem of human improvement is that practitioners depend on their clients to achieve any results. In most practices, practitioners rely on their own skill and will to produce results. They depend on clients or customers for approbation, applause, purchases, and the like. But in psychotherapy, teaching, and related practices, clients co-produce results. Students' and patients' will and skill are no less important than practitioners'. No matter how hard practitioners try, or how artfully they work, they can produce no results alone. They can succeed only if their clients succeed. This connection between practitioners and clients can produce astonishing accomplishments, when will and skill are combined in a common effort. But they also can produce terrific tensions. The possible achievements stimulate hopes for ambitious improvements in clients and practitioners, for the successes would be a great victory for both. But the possible failures encourage great caution, for if clients fail for having reached too high, practitioners will have little to show for their work save loss and even anguish.

There are many variations within and among practices in the acuteness of practitioners' dependence. In addition, even when

dependence is acute, practitioners have devised some ingenious means of distancing themselves from clients' struggles. But there are limits to the distance practitioners can create. They cannot work without clients, so great distance is impossible. In addition, it is difficult to find indices of practitioners' success that are secure against clients' failure, precisely because of the promises these practices make for the improvement of others. Workers in these practices depend upon their clients and are vulnerable to them in ways unknown in any other human work.

Dependence and uncertainty interact. Practitioners who define improvement in complex and ambiguous terms increase not only the uncertainty with which they may have to deal, but also their vulnerability to clients, for the clearer and simpler a result is, the more likely clients are to achieve it with modest effort. Such results are appealing to many practitioners, for they promise at least modest success without the risk of great vulnerability to clients' abilities, interests, or momentary whims. More complex and ambiguous results require much more from clients, and often from practitioners. Practitioners who urge such results on clients—or who are urged toward them by clients—often hesitate to bank so much of their own success on a client's difficult performance. But whatever they decide, when practitioners weigh choices between more and less uncertain objectives, they also weigh how much they are willing to depend on their clients' will and skill.

Finally, human improvement is regularly difficult, quite apart from these two other problems. Even little children who want to learn multiplication often have great problems and learn little. One source of the difficulty is that such improvements can require much mental effort and emotional energy. They do not come naturally. Even if one learns multiplication in it simplest form—rote memorization of "times tables"—most students must work hard to learn the combinations and to hold them in memory. They must additionally remember all the rules and operations that govern the multiplication process so they can correctly manipulate the many large numbers they cannot memorize. Such work also requires emotional commitment simply because of the volume of work and the extended application required to learn. Students must willingly mobilize the mental forces needed to remember the material and to use it correctly. That commitment almost surely increases as

students' capacity to remember declines; if so, the less able learners are, the more emotional commitment they must make to the work in order to learn. Furthermore, students must do these things more or less on trust, in the unconfirmed faith that the often unintelligible operations will be useful to them one day. The less able students are, the more important trust becomes. Mobilizing and maintaining such energy, commitment, and faith are rarely easy. Good teaching and intelligent materials help, and clumsiness in these departments can make things more difficult. But good instruction does not eliminate the mental and emotional difficulties of learning, any more than technically refined rockets eliminate gravity. They only overcome the contrary forces more efficiently than clumsier alternatives.

If one seeks to learn more complex versions of multiplication, by understanding number groups and gaining insight into their combination, some of these difficulties may recede. But others increase. Some students find it difficult to abstract from groups of things to groups of numbers. Others struggle with the notion of groups of groups. Others have trouble getting beyond an additive concept of multiplication. Some can puzzle their way through these matters, but find it difficult to match mathematical understanding to the algorithms commonly used to teach and do multiplication.

Educational improvement thus can become more difficult as it becomes more attractive and adventurous. One way to reduce difficulty is to avoid more difficult conceptions of results. Mechanical learning of multiplication offers students less intellectual power than understanding mathematical groups and their combination, but it takes less mental effort. The old Romantic assumption, that adventurous learning is easy because it expresses children's natural curiosity, finds little support here. This point holds for all practices in this family. Patients often enter behavior therapy, for instance, in order to cope with problems of overeating. That requires recognition of a problem and mobilization of the commitment and energy to do something about it. Neither is easy. In addition, behavior therapy is by definition uncomfortable: physically painful, emotionally stressful, or both. But it is probably less difficult to suppress overeating within a schedule of rewards and punishments than it is to probe personal history in order to locate the sources of gluttony and, by understanding and working through, overcome

them. Physical punishments and rewards may be painful, but responding to them requires less emotional and intellectual investment than deep and sustained self-examination.

A second source of difficulty in human improvement is that it is often risky. Psychotherapy that probes gluttony not only requires great mental effort, but it also demands that clients explore painful childhood deprivations. Clients must recall and relive experiences that once terrified them and that are still vital enough to keep them gorging. That is risky in part because of the terrors that those old experiences held and in part because patients cannot know at the outset, or even much later in treatment, whether they will succeed. Often they are quite uncertain at the end of treatment. Facing the old terrors can be bad enough; after all, one has learned to live with them, even if painfully. Reliving them may only make things worse, disturbing and perhaps destroying a difficult equilibrium. Even worse, perhaps one will face them in vain, causing much anguish but no progress. Patients who wish to change face a dual risk: the loss of familiar if problematic versions of themselves along with the failure to become the people they wish to be. Students regularly face similar risks. Doing a little multiplication, even doing it badly, may not be entirely satisfying. Many students wish to do more or better. But their present accomplishment is something they achieved. Often the error-ridden algorithms work in spite of themselves; and even if they work irregularly, they represent some accomplishment, something that was learned at a personal cost. Such achievements are not cast aside lightly, at least by their creators. But to make the commitment to learn more, or a different version of multiplication, often looks like just such a decision. At least, it is to admit tacitly that what has been achieved is not enough, that the student one has become is in some sense inadequate. At the same time, as students weigh a possible commitment to learn more, many fear that they will fail. If they cannot master the skills and ideas that they wish to learn, or that they have been told they must learn, they risk not becoming the person they wish to be or have been told they should become. These small struggles, often enough to reduce students to tears and sometimes enough to provoke major anxiety attacks, have been little explored. At least part of the reason is that old American faith that learning is natural, that the best things in life are free.

Another way that practitioners can reduce the difficulties of human improvement is thus to reduce the risks. Teachers often do this by defining knowledge in clear and tidy ways, by teaching material in small increments that make modest departures from past knowledge, and by organizing lessons so that most students will perform decently, even if they learn little. Worries about the risks of improvement are of course not equally distributed across learners. Some students are so able, or so confident, that they seem almost oblivious to risk. But many others lack such confidence, ability, or both. Many strongly prefer mechanical learning precisely because it reduces risk by packaging knowledge in relatively discrete and manageable form. They find the unintelligible little packages greatly preferable to larger packages and more uncertain sense-making, precisely because those small packages are tidy and easily managed. We may know that these little packages of facts and algorithms offer less gain, but students know that they present less risk. Students' aversion to risk is doubtless part of the explanation for the difficulties encountered in various efforts to make learning and teaching more adventurous. Students resisted not because the curriculum was weak or the teaching inept, but because they were put off by the risks that the teaching opened up. Romantic advocates of intellectual adventure, and many students of such reforms, have ignored such problems, in part because they accepted that adventurous learning was natural, and mechanical learning was an unnatural imposition on the young. The aversion to considering risk may help explain why, in studies of the implementation of such instruction, only factors external to learning—teachers' techniques, school organization, curriculum, and the like—are held responsible for implementation problems.

Problems of difficulty and dependence interact. When teachers devise very taxing lessons, they create opportunities for students to make large intellectual leaps forward, and this holds out the promise of great success and satisfaction for all concerned. But such lessons also increase the probability that students will demur, avoid the challenge, ask for less demanding assignments, resist, or rebel. This would close off much chance of success for practitioners. The risks and difficulties of human improvement create contrary incentives, pulling practitioners and clients between stiff demands on the one hand and modest requirements on the other.

As practitioners struggle over appropriate ambitions for their clients' work, then, they also struggle with their own chances of professional success and satisfaction. Their practices present many opportunities to help others and many occasions for what seems selfless endeavor. But because their clients' successes and failures are in some respects their own, even practitioners' most selfless work is a vehicle for their professional success and satisfaction. The humans they improve include themselves.

Influences on Solving Problems of Human Improvement. My analysis implies that practitioners of human improvement face competing pressures. The promise of improving others, clients' wishes to improve, and their own desire to succeed as professionals all pull practitioners toward more demanding programs of betterment. They offer incentives to struggle with large uncertainties and to encourage clients to pursue difficult and risky improvements, for if practitioners and clients risk only a little, they can never gain much for themselves or each other. But ambitious and demanding improvements increase the uncertainty with which practitioners and clients must deal. They increase the difficulty and risk of the work, therefore increasing the chances that clients will be reluctant to try or be unable to make much progress. Taken together, these considerations pull practitioners toward less risky and demanding programs of betterment. Such conflicts, between ambitions for success and the risks they open up, and fear of failure and the safer approaches to which they lead are endemic to practices of human improvement.

But if these conflicts are found everywhere in these practices, they are not everywhere the same. Practitioners' personal resources—their knowledge, skills, commitments, and other resources—affect the sorts of improvements they seek and the success they achieve. In addition, the social arrangements of practice also affect the ease or difficulty of solving these common problems.

One set of social arrangements is organizational. Agency selectivity is one crucial feature of the organization of practice. It seems fair to say that practitioners who work in selective agencies are more likely to wind up with capable clients than those who work in open admissions schools, clinics, or social agencies. But if there are

different degrees of selectivity, there also are different sorts. Elite colleges and universities are much more selective than community colleges and state universities, if we consider the ratio of applicants to vacancies, but they seem to employ similar approaches to selection of students. By contrast, psychoanalysts in private practice probably have a much lower ratio of applicants to vacancies than elite universities, but they may screen more effectively for purposes of practice. Elite institutions of higher education accept only a small fraction of those who apply, and are therefore designated as highly selective. Yet they accept many students who seem academically average at best, partly because the admissions process mediates a large list of competing demands for students arising from alumni, different academic departments, sports departments extracurricular activities, and concerns for future alumni fund raising. These schools are very selective if one thinks of the ratio of applicants to vacancies. But they accept a great range of students because the selection criteria vary to reflect the wishes of many different internal constituencies. This also is the case, though not as markedly, at much less selective state universities. As a consequence, professors in elite schools are more likely, on average, to wind up with students who are capable and willing to take on hard academic work. But even though selectivity in the academic elite is extreme in one sense, most teachers in such schools have no part in the process, and many are at least partly dissatisfied with the results, for many students who wind up in their classes are undistinguished, at least in that subject, and are uncommitted to it as well.

By contrast, psychoanalysts in private select their patients themselves or with the help of matchmaking colleagues. There are no committees, and if there is conflict in selection criteria, it is internal to the practitioner. Analysts screen for commitment, capacity to pay, emotional fit, their own professional interests, and other things. But they do so to satisfy only themselves, including their conflicts. They are therefore much more likely than their colleagues in state mental hospitals to wind up with capable patients who will work hard, take risks, and have a good chance to succeed in treatment. Analysts employ a different sort of selectivity than college admissions, with rather different processes and purposes. Because it is more closely tailored to the purposes of practice

and is carried out by practitioners alone, it seems likely to produce a better fit between practitioners and clients than college admissions.[54]

Client choice is another salient feature of the organization of practice. Some practitioners work with clients who are compelled to accept their services; others work with clients who eagerly sought them out. The chances that clients will be willing to work hard and take risks would seem to be greater in the second sort of situation than in the first. Although this may be true in a superficial way, the effects of client choice are powerfully mediated by agency selectivity. Psychotherapists who practice in state mental hospitals and many teachers in public high schools work with clients who chose their services. Yet the benefits of client choice in these cases are often modest because both sorts of practitioners work in compulsory agencies with unselected clients, or clients who are selected for their acute problems. Student choices in such high schools often reflect a preference for little or no improvement rather than for hard work and big changes. And client choice in state hospitals may have little effect because most potential clients have few problems that are treatable by psychotherapy or analysis. By contrast, student choice of teachers in schools that are very selective is more likely to reflect a commitment to a particular subject or approach to teaching, for in such places, students are at least partly screened for academic ability and interest in schoolwork. As a result, students' choices are more likely to lead to mutual willingness of students and teachers to work hard and take risks, even though teachers often have little influence over who takes their classes. But even closer matching of client and practitioner can be observed in more selective situations, as in the work of some private tutors, teachers in music conservatories, or professors in graduate or professional departments of elite universities. In these cases, client choice combines with selectivity to produce more or less close approximations of mutual choice. And the combination of such choice with the effects of specialized selection increases the probability that clients and practitioners will work hard, take risks, and succeed.

If we regard these organizational arrangements from what I earlier called a perspective of practice, we can see that they are resources of practice, for differences in selectivity and client choice

can ease or exacerbate problems that practitioners face. Consider teachers, therapists, or consultants whose work is so organized that they see only clients who have been carefully and mutually selected. It seems fair to say that organizational arrangements that produce such matching greatly ease the three problems of practice sketched earlier. Risk and difficulty are eased, for instance, in part because clients are selected for their capacities to take on difficult work and succeed in it. Practitioners' dependence on clients also is eased, in part because their clients are carefully selected for their willingness to work and for other qualities that make it likely they can succeed. Practitioners take relatively modest risks in work with such clients, even in pressing them for ambitious improvements. One reason is that their clients are so capable and committed. Another is that, in such selective situations, there frequently is a queue of at least equally talented applicants waiting for their chance. If some clients fail to perform, practitioners can take others on instead.

Another way to put this point is that resources of practice often exist in a trade-off relationship with practitioners' personal resources. In the sort of situation just described, practitioners need not rely heavily or entirely on their own personal resources to produce good results because the organizations in which they work provide many compensating resources. But consider, by contrast, teachers or therapists who must treat anyone who applies or who must practice with clients who have been compelled to see them. They work without the benefit of such organizational resources as selectivity and mutual choice, which makes it much more risky and difficult for practitioners to press clients for serious improvement. This might be attributed to the likelihood that few clients have much interest in improvement in such circumstances or little capacity. Or, more generously, one might attribute it to circumstances that make hopeful clients hesitate to attempt improvement. Or one might point to both difficulties. But whichever interpretation one chooses, the problems of practice are greater in this second case. If practitioners are to produce results that match those in more selective agencies, it will be because they do it much more on their own. They would have to work heroically, without much assistance from organizational resources and often in spite of many obstacles due to organization. In cases of this sort, practitioners

must draw deeply on their personal resources to compensate for the lack of resources that organization can provide.

Social conventions about results are a second set of social arrangements that affect solutions to the problems of practice. Such conventions arise from theories about social problems and their treatment, professional doctrines about practitioners' work, codes established by licensing boards, and the requirements of other public agencies. These conventions are not like items on a shopping list—easily entered and just as easily altered. But they are made by men and women nonetheless, and changed by them as well.

One such convention concerns the allocation of responsibility for producing results. In most practices of human improvement, clients are assigned primary responsibility for producing the results of practice. Organizational consultants, for instance, offer their services to firms and agencies that wish to improve performance, to increase efficiency, or to improve communication. But the consultants' responsibilities are limited. They define and locate problems, explore and explain their nature, and suggest solutions. Some consultants offer assistance in producing the results in the sense that they provide training of various sorts. But they are consultants, technical assistants, helpers; the organization is in charge of execution. This arrangement is mutually beneficial for various reasons. But one consequence is that consultants' responsibility for results is greatly attenuated.

The same sort of thing can be said of psychotherapies. As varied as these therapies are, most assign primary responsibility for results to patients. Traditional psychotherapies have elaborate theories of disorder and treatment that center most attention on the patients' work. In order to struggle successfully with neurotic problems, patients must rediscover salient early experience. They must recall and relive it. Patients must transfer old feelings to the therapist. They must work through old feelings and new insights with the therapist or analyst so as to comprehend and defuse the old barriers to development. Patients also must overcome resistance to all of this and more. In all these endeavors, therapists are guides, helpers, invaluable companions, wise counselors, and even patient victims of transference. But however helpful they may be in these various roles, therapists are not chiefly responsible for results. The results of therapy and analysis are primarily the patients' work. In

most therapies, practitioners are cautioned to avoid feeling that they can produce results and to avoid giving patients the slightest hint that they could, for most treatments rest partly on the theory that patients must accept responsibility for their problems, feelings, and improvement. Therapists, it is believed, could not do the patients' work without destroying much chance of growth in their clients and perhaps even making things worse.

Social conventions about results in school teaching are very different: Teachers are assigned heavy responsibility for students' learning. It is commonly assumed that all children can learn if only they are well taught. Inherited ideas about the efficacy of schools and the ease of learning have combined to create the sense that students will learn if only teachers will instruct. These ideas about schoolteachers' efficacy and responsibility are unique among practices of human improvement. They are unique even within teaching. Tutors and teachers in selective colleges, universities, and private schools are not assigned such heavy responsibilites. Their students are expected to share the responsibility for learning; often they are expected to learn well even when teachers instruct badly.

These beliefs about schoolteachers' responsibility for results affect their struggles with the common problems of practice. For instance, they enhance teachers' dependence on students because they tighten the link between students' and teachers' success. The belief that students are primarily responsible for learning and that teachers are only their guides and helpers loosens it. One might think it wise to keep this link tight, to enhance incentives for teachers to help students succeed. Although true in a general way, these matters are never worked out in general ways, but always in particular situations. Success can be defined in many ways, and these are sensitive to the organizations in which teachers work as well as to beliefs about results. For instance, in schools that assign both students and teachers heavy responsibility for results, teachers often push their charges more and take more risks. One reason for this is that such schools usually accept only students who agree to a sort of social contract, who accept a large responsibility for performance as a condition of admission or continuation. Some exclusive secondary schools fit this description, but so did the Harlem Street Academies and other schools that take only children who have failed elsewhere.

Why does a more equally shared responsibility for results give teachers leeway to press students harder? Part of the reason is that teachers everywhere depend on their students for success. If this dependence is managed under circumstances in which students are obliged to work hard and try to succeed, and in which they will be held accountable for not trying, teachers have a basis for expecting commitment to the purposes of their practice. They can manage their dependence on students for success by pressing students to try hard, to do their best. But if teachers must cope with this dependence under the assumption that students' learning depends heavily on them, and in circumstances in which it is difficult to hold students responsible for trying hard and doing their best, teachers can be quite vulnerable to students' disinclination to work. Just such circumstances exist in the compulsory, mass-enrolled U.S. public schools. In this situation, one rational way for teachers to cope with their dependence on students—to increase the chances of their own success by producing success for students—is to find criteria of success that most students can achieve with relative ease, for if they pressed students very hard, many might fail. Some might resist, or even rebel. Either or both would be problematic. The convention that teachers are primarily responsible for students' learning in a mass-enrolled, compulsory system creates incentives for teachers to accept students' values, ideas, and ambitions. It pushes them toward definitions of knowledge and learning that make it easy for many students to succeed.

Considered from a perspective of policy, my point is that the promise of success for all in a universal system creates pressures to avoid failure, for the greater the failure rate, the less the system has kept its promises. And because it is easier to avoid failure by reducing criteria of success than by stiffening them, other things being equal, such promises tend to push systems of this sort toward easier standards. Considered from a perspective of practice, my point is that, when assigned heavy responsibility for clients' success in such a universal service, practitioners' dependence encourages them to redefine success in terms acceptable to most clients. Some recent efforts at making schools more "effective" have focused, quite typically, on ways to stiffen teachers' responsibility for learning, without a parallel stiffening of students' responsibility.

A second social convention about results that affects practitioners' problem solving concerns the extent of consensus about the results of practice. Some schools or societies are torn by conflict over the aims of education; others display much agreement. In Japan, Singapore, France, and other nations, there has been relatively little dispute about the results of schooling. In addition, the consensus is expressed in a few systemwide examinations devised by teachers and others close to the system. The exams control school leaving and transitions within the first twelve grades. Consensus about results also can be observed in some schools or school systems in the United States, the result of deliberate action by teachers, parents, and school heads.

The degree of consensus about results affects practice. For example, it influences the extent of uncertainty with which teachers and students must cope. Systems marked by broad consensus on a few criteria of results give considerable focus to instruction. If students dissent from the established purposes, teachers and classmates will point to the exams, to their great importance for school and career, and to the great weight that the community, the school, or society attaches to them. If teachers wander off the curriculum, students will say similar things to the teacher, the head, each other, and parents. Consensus about results also eases teachers' dependence on students: they need not attend closely to students' arguments about issues of purpose or their lack of commitment to common purposes. Instead, consensus about results encourages students and teachers to work together toward a given common goal: doing well on the test. The existence of a common purpose that is taken seriously by society, that is clearly expressed in a criterion, and that is linked to curriculum helps to mobilize cooperation between students and teachers.

Social consensus about results is thus a resource of practice. As I noted earlier, these resources exist in trade-off relationships with practitioners' resources. Teachers who work in systems or schools that have settled on results need not spend great energy or time mobilizing students' agreement on this point. Society has, in effect, settled it for them. But teachers who work in schools or systems that are torn by conflict over the purposes of schooling are deprived of this resource. They must spend considerable energy on uncertainty and dispute about results, and they are more vulnerable to students as a consequence.

The United States is such a system, or collection of systems. It is riven by disputes about the results of schooling. Many Americans esteem education but others assign it low importance. Even among those who esteem it, there is deep disagreement over what sort of education counts, why, and how much. As a consequence, there is a small blizzard of tests and other results standards. Most systems use at least several different tests, and more are added regularly. Recently, many states and localities have added tests of "minimum competency" to others already extant.

A few tests create modest pockets of consensus; the advanced placement exams and curriculums are one example. But most complicate matters rather than simplifying them. They create confusion about what teachers and students are supposed to do and how well they are supposed to do it. Some of this shows up in local arguments about which tests students and teachers should be working toward. Some shows up in teachers' own conflicts about what they should be doing. This situation deprives teachers and students of resources of practice. Disagreement about results increases uncertainty and the need to struggle with it in classrooms. It also increases teachers' dependence on students, for teachers have no solid external criterion of results to which they can point and around which students can mobilize their own sense of purpose. Teachers and students must work out, by negotiation and persuasion, results that are agreeable to all or most. This naturally gives students a large voice. In these cases, teachers and students must settle for themselves problems that would elsewhere be settled for them by society or their school.

All practices of human improvement face impossible problems, arising from the many difficulties of defining and delivering on promises of personal and social betterment. But all practitioners do not face equally difficult versions of these problems. Those who work in highly selective settings, in which they choose clients and are chosen by them, are less vulnerable to clients than those who work in unselective situations. Those who work in institutions marked by strong consensus about results need not struggle with as much uncertainty about the ends and means of practice as those who work in a crossfire of argument. In these cases and others, social

arrangements help solve the common problems of practice for some practitioners but exacerbate them for others.

Another way to put this is that, in theory, the problems of teaching are not at all unusual when compared with other practices of human improvement. But in fact, school teaching is distinguished by the extent to which social arrangements heighten the common problems of practice. Private tutors, graduate professors, and most psychotherapists practice in highly selective settings that ease the impossibilities of their work by presenting them with capable and committed clients. But most schoolteachers work in compulsory and unselective institutions in which there are few qualifications for entry and in which practitioners and clients have few opportunities for mutual choice. These circumstances heighten the impossibilities of practice by presenting schoolteachers with many clients who are relatively incapable and uncommitted. Practitioners in both sorts of setting struggle with uncertainty and dependence on clients, but therapists and others do so with considerable assistance from the organizational resources of practice. Schoolteachers have little assistance from that quarter.

In many nations, these problems of teaching are eased by a strong social consensus about the results of practice and by a plain focus on one or two examinations. But in the United States, the ends and means of schooling are a matter of terrific dispute. Schools and school systems with a clear and settled view of purposes reduce uncertainty and ease teachers' vulnerability to students. But in most American public schools, these problems are compounded by persistent dispute about what teachers should do and how they should do it. Thus, the dominant social arrangements of practice in teaching tend to increase both uncertainty and practitioners' dependence on clients.

These circumstances create powerful incentives for practitioners to reduce the uncertainty with which their work abounds and to limit the extent of their dependence. The most efficient way to achieve these ends is to adopt very conservative instructional strategies. One common strategy of this sort is to simplify work so that most can manage it and all can achieve some success. Another is to define knowledge in rigid ways so as to reduce or drive out most argument. Still another is to manage classrooms in ways that

reduce the probability of uncertainty or dispute. These are all common properties of school teaching in this country.

In addition, schoolteachers are assigned heavy responsibility for producing results; practitioners' responsibilities in all other practices of human improvement, and elsewhere in teaching, are less marked. These responsibilities intensify teachers' vulnerability to students. They also make any uncertainty terribly problematic because it looms as a large obstacle to success. The unbalanced responsibility for results in U.S. school teaching strips away even more of the social and organizational defenses commonly available to practitioners in other practices of human improvement. This multiplies incentives for teachers to adopt conservative approaches to practice.

One bit of fallout from my argument, then, is that, without ever considering the content of curriculum or the organization of schools or classrooms, we can see powerful pressures that drive schoolteachers toward extremely conservative instructional strategies. Like every other practice of human improvement, school teaching is an impossible profession. But unlike all the others, the social circumstances of school teaching tend to strip practitioners of the protections that help make practice manageable for most therapists, university professors, organizational consultants, and others.

I find this account useful in an analytic sense because the extreme situation of this one practice illuminates the entire family to which it belongs. And the common properties of human improvement practices put many features of teaching in a helpful perspective. But as a practical matter, it is painful to observe so many people who are so committed to improving others producing so much frustration and so little effect. It is particularly painful to observe that these difficulties arise in part from Americans' distinctive optimism about the efficacy of teaching, the glories of learning, and the possibilities for human improvement through schools.

Demands of Adventurous Teaching. Adventurous instruction makes distinctive demands on teachers. It opens up uncertainty in classroom content and conduct. It increases the difficulty of academic work for students, partly because the work becomes riskier. And it invites instructional interactions that enhance teachers' dependence on students. In these ways and others, such instruction brings teachers into much more vivid contact with the common problems of practice. I do not mean that such teaching cannot be done, or done well. I mean only that ways to relinquish the old instruction must be found and new strategies devised at the same time. Neither is easy.

Consider the problems of uncertainty and difficulty for students. Learning to "discover" or "understand" a subject often seems to entail getting students to hold several different, sometimes seemingly divergent views of a topic in mind at once. In the case of multiplication, this might be reflected in the study of various ways to represent the combination of number groups. To solve the problem of multiplying ten times twelve, for instance, students might be asked to invent different ways of working the problem. Some might begin by adding twelve ten times. Others might add twelve five times, repeat it, and add the products. Still others might multiply twelve by two, repeat that five times, and add the products. Others might multiply ten by ten, and then ten by two, and add the products. Each is a plausible though somewhat unconventional way to do and represent multiplication. Seeing the array, and discussing it, might advance understanding of what multiplication is about. But it also would multiply uncertainty about the topic. That would be a nearly inevitable result, at least in the short run, of confronting different versions of multiplications. It also would be a likely result of inviting students to explore the meaning and merits of various representations, for such explorations would dramatize the many different ways in which this simple arithmetical matter can be viewed. Increased uncertainty would be especially likely if, as most advocates of such teaching argue, students probed these points in discussions, considered each others' versions of the procedure, and challenged each others' reasons for representing multiplication in one way and not another.

Such work can be fascinating, and students could learn a great deal about multiplication and mathematical reasoning from it. But in order to do so, they would have to tolerate considerable uncertainty: about the nature of arithmetical problems, about the procedures for solving these problems, about what the answers are and what an answer is, and about how implausible answers can be detected and plausible answers defended. If done well, this would

lead to questions about the nature of arithmetic and what it means to know it. That would be all to the good; if done carefully, such work can be immensely illuminating. But it requires students to find ways to embrace uncertainty, to adopt trying out (i.e., hypothesis framing and testing) as a way of life in learning. To do so, teachers and students must devise instructional strategies that enable them to manage and capitalize on the higher levels of uncertainty. Such strategies are available, but they make unusual demands on teachers and students. Though they have been little investigated, there is no evidence that they are easy.

Adventurous instruction also is more difficult than conventional teaching. One reason for this, just sketched, is that simplified conceptions of knowledge and learning require less mental effort than what we call understanding or problem solving. Although some students find rote learning frustrating, their frustration does not arise from its difficulty, but from what they see as its superficial and boring qualities. Another source of greater difficulty is risk. Adventurous pedagogy invites students to share their ideas, arguments, intuitions, and mistakes with classmates and teachers. Although one can learn much from collective debate and scrutiny, it entails an extensive exposure of self. Students may find this especially problematic in classrooms in which a large and possibly competitive audience watches and listens. Instruction of this sort requires that teachers find ways to engage students more fully in learning, but it also requires that they find ways to reduce or otherwise manage the possible personal risks of such greater engagement. It is no mean trick to intensify engagement at the same time as easing its risks. Teachers and students do have strategies that permit them to cope with this curious requirement. Although they have been little explored or even described, there is no evidence that they are easy.

This brief discussion suggests that efforts to make instruction more adventurous strike close to the problematic heart of teaching. Teachers who try to work in this style must become adovates for uncertainty, trying to open up varied conceptions of knowledge. This ordinarily increases the difficulty of their work, in part because so many students seem allergic to it, at least initially. In order to succeed with such students, teachers must take on a large agenda: help students abandon the safety of rote learning, instruct

them in framing and testing hypotheses, and build a climate of tolerance for others' ideas and a curiosity about unusual answers, among other things. Teachers who take this path must work harder, concentrate more, and embrace larger pedagogical responsibilites than if they only assigned text chapters and seat work. They also must have unusual knowledge and skills. They require, for instance, a deep understanding of the material and modes of discourse about it. They must be able to comprehend students' thinking, their interpretations of problems, their mistakes, and their puzzles. And, when they cannot comprehend, they must have the capacity to probe thoughtfully and tactfully. These and other capacities would not be needed if teachers relied on texts and worksheets.

In addition, teachers who seek to make instruction more adventurous must take unusual risks, even if none of their students resists, for if they offer academic subjects as fields of inquiry, they must support their actions and decisions as intellectuals, not merely as functionaries or voices for a text. They must appeal to rules of inquiry, methods of proof, and canons of evidence for resolving disputes and settling uncertainty about the solutions to problems rather than appealing to the textbook or the authority of their office. In order to do so, teachers also must be prepared to share authority, for how could students become active inquirers if their ideas and solutions were not taken seriously, accepted if plausible and well defended, and rejected only if demonstrably implausible? If academic subjects are to be taught as fields of inquiry, students must become inquirers, learning how to frame problems and decide disputes rather than learning how to get the right answer. They must therefore be encouraged to assume the authority that comes with intellectual competence rather than to fly blind on the authority of text or teacher.

When teachers embark on an adventurous approach to pedagogy, then, they open up an entirely new regime, one in which students have more autonomy in thought and expression and much more authority as intellects. But such autonomy and authority are difficult for many students and their teachers. They find it unfamiliar at least, unsettling, and even threatening. None of this is required if teachers proceed in the standard instructional format: They can rely on the authority of text, or on their official position,

to cope with uncertainty or dispute about knowledge or procedure.

Another result of adventurous instruction, therefore, is that teachers must depend on their students much more visibly and acutely, for if students are to become inquirers, if their knowledge is constructed rather than merely received, they must take a large responsibility in producing instruction. It is, after all, their ideas, explanations, and other encounters with the material that come to compose much of the subject matter of the class. If students do not pick up these broader intellectual and social responsibilities, most adventurous approaches to instruction simply will not work. But if students do pick them up, teachers will depend on these students more to produce the class. Teachers must rely less on their own protected performances in lectures or recitation or on materials that they control, such as texts and worksheets. They must accept their charges much more fully as co-instructors. There are strategies that teachers use to work in this way, though they have been little explored. Teachers must find ways to help students expand their intellectual authority while seeming to reduce or change their own authority. Teachers must find ways to extend their own dependence on students while seeming to relinquish many central instruments of influence in the classroom. Teachers must make themselves more vulnerable, yielding to students the opportunities to inflict painful wounds, in order to help them become more powerful thinkers. Such work can be exhilarating and rewarding, but it is not easy.

Conclusion

Teaching is a practice of human improvement. It promises intellectual growth, humane awareness, economic opportunities, civic consciousness, and many other virtues. Like other practices in this new family of human endeavors, teaching is an impossible profession. I do not mean that teaching cannot be done. I mean that each of these practices is a medium in which we now struggle with essential but insoluble problems of human nature and destiny. Nor do I mean that teachers are really theologians or philosophers *manque*; there is much in their work that is ordinary. I mean only that teaching has become an occasion for coping with these insoluble problems. In earlier ages, the problems were solved elsewhere,

and if teachers dealt with such issues, they appear mostly to have rehearsed and passed on the answers. But in a secularized world, in which human progress is the highest good, the practices that deliver such progress inevitably become a battleground for struggles about the meaning of progress, about the means to achieve it, and about how much we have achieved.

One issue that bedevils work in all these trades, then, is how the purposes of improvement will be defined and what means will be employed to realize them. I noted that the ends and means of teaching can be construed in very ambitious and adventurous terms or in rather simplified and routine terms. This impossible practice can therefore be constructed in a rather easy and routine manner or in a very difficult and unpredictable manner. I frame this point in a larger analysis of efforts to explain why teachers in the United States have mostly chosen to construe the ends and means of their work in a rather traditional and often quite limited fashion. In addition to my historical and sociological comments on this matter, I tried to answer the question with reference to the nature of teaching practice itself. I argued that human improvement makes distinctively difficult demands on practices and practitioners. Because the central issues of practice are both insoluble and unavoidable, ways must be found to cope. Ways must be found to offer practitioners and clients opportunities for improvement, but to do so in a fashion that does not commit them to endless struggle with insoluble issues, for they are not philosophers or theologians, debaters, or analysts. They are practitioners who seek specific improvement for specific persons.

In search of these ways of coping, I compared teaching with other practices of human improvement. I sketched some of the means of coping found in other practices. Most psychotherapies, for instance, delegate extensive responsibility for results—including decisions about when therapy has succeeded, and can end—to patients. Most practices of human improvement are quite selective: Clients and practitioners choose each other, and clients are usually selected with an eye to their commitment and other capacities for success. These and other ways of coping with the impossibilities of such work arise from various social arrangements of practice: conventions about results, and the organization of practice chief among them. I termed such arrangements "resources of practice,"

in part because, like practitioners' personal resources, they help solve the common problems of practices of human improvement. But unlike practitioners' resources, these arrangements advance the purposes of human improvement without requiring much or any attention from practitioners. In consequence, they permit practitioners and clients to dig deeply into their work together if they wish, more deeply than if these resources were reduced or removed.

School teaching is distinctive, however, because it lacks most of these resources of practice. Most schoolteachers confront the insoluble problems of human improvement relatively naked, enjoying much less assistance from the social resources of practice than most of their colleagues elsewhere. This situation raises the costs, for teachers, of ambitious efforts to help their students improve.

Part of my argument, then, is that if we consider teaching from a perspective of practice, we can see many reasons why teachers consistently make conservative choices about instructional strategy, for lacking many resources of practice to support and protect their efforts at human improvement, teachers are thrown back on their own resources. Because the particular improvement in which teachers specialize is intellectual growth, academic and social learning, these personal resources consist of how they represent knowledge, define learning, and organize knowledge and learning in their classes and the personal conviction, determination, and generosity they bring to such matters.

My analysis does not entirely explain conservatism in teaching. Teachers' work is influenced by its social circumstances, and if all Americans had been educated as John Dewey wished, teachers' pursuit of adventurous instruction probably would be easier. But my account may add something to our understanding of teachers' strategic choices and to the difficulties they have had in efforts to make instruction adventurous, for such instruction invites teachers to open themselves to the great problems that lie at the heart of their work, to frame a pedagogy that embraces uncertainty, to increase the risks of learning and teaching and to enhance their vulnerability to students. Such work has been done and can be done more, but it runs against the grain. In all practices of human improvement, practitioners and clients find some protection from the impossible problems they confront. In most of these practices,

they are built into the social arrangements that surround practitioners' work. In school teaching, though, those protections are wanting. As a result, practitioners establish other protections in the ways that they deploy their resources.

Because this chapter is part of a celebration of a new academic center for the study of instruction, it seems appropriate to close with some questions. In reconsidering efforts to promote exciting instruction in these pages, I have posed questions that usually have gone unasked: What does it take to carry off adventurous teaching? How do teachers who do it well manage to do it? What strategies do they use and why? I like the questions partly because we have nearly everything to learn about the answers, which seems odd for a people as enthusiastic about such teaching as Americans. And I like them partly because they call attention to explaining the successes of adventurous teaching. This seems more appropriate to our historical situation, and it may help to advance this distinctive tradition of thought and practice.

Notes

1. Carl Kaestle, *Pillars of the Republic* (New York: Hill and Wang, 1983), chaps. 4, 5, 6; David K. Cohen, "Loss as a Theme in Social Policy," *Harvard Educational Review* 46 (November 1976): 553–571.

2. Mark Twain, *Life on the Mississippi* (New York: Bantam, 1945), p. 44.

3. Twain was one of the greatest school haters, but he was hardly alone. James Fenimore Cooper's *The Last of the Mohicans* celebrates many of the same ideas. And despite Thoreau's arguments for education, he was no fan of schools.

4. Edward Eggleston, *The Hoosier Schoolmaster* (New York: Arno Press, 1962).

5. Both *The School and Society* and *The Child and the Curriculum*, two of Dewey's most popular books, depict what he called the "old education" as the result of misguided ideas about learning and teaching. In these and other writing, Dewey seems to assume that once teachers understand what he sometimes called the "laws of psychology," they would be in a position to set things right. This impression is reinforced by the account offered in Katherine C. Mayhew and Anna C. Edwards, *The Dewey School* (New York: Atheneum, 1966), chaps. 2, 3, 4. The book reveals that Dewey and the teachers had no idea how difficult it would be to teach as he wished. Dewey confirms this in memoranda to the authors.

6. Larry Cuban, *How Teachers Taught* (New York: Longman, 1984), pp. 1–11. Though I raise some questions, I am much indebted to Larry Cuban's work in this book and in his several thoughtful essays.

7. Dewey had many important colleagues, and he drew on a modest tradition of child-centered theory and practice. In some ways, he seems more a great

codifier and rationalizer of this tradition than an inventor. But he was the first great philosopher and psychologist of adventurous learning and the first in this tradition who spoke to a national audience.

8. Larry Cuban draws on many of these in *How Teachers Taught* and in his more recent *Teachers and Machines* (New York: Teachers College Press, 1986).

9. There has been an outpouring of research along these lines in the past fifteen or twenty years. One of the seminal studies was Paul Berman and Milbrey McLaughlin, *Federal Programs Supporting Educational Change*, vol. 7 (Santa Monica, CA: Rand Corporation, 1977). Another was Karl Weick, "Educational Organizations as Loosely Coupled Systems," *Administrative Science Quarterly* 21 (March 1976): 1–19. Because most research on American education is not comparative—either across types of institutions within the United States or across nations within the same type of institution—the awkward issue presented here has not been much explored.

10. These points are regularly rediscovered in the wake of successive efforts to change teaching. Many of them are nicely summarized, for the current reforms, in Michael Sedlak, Christopher Wheeler, Diana Pullin, and Philip Cusick, *Selling Students Short* (New York: Teachers College Press, 1986), pp. 99–130.

11. Cuban, *Teachers and Machines*, pp. 51–71.

12. Many critics of these reforms correctly note that the reformers did not take teachers' views into account in planning their work. But this was no oversight. Many of the academics who pressed the reforms and devised the new materials regarded teachers as the problem and sought to write books that would work in spite of teachers. See Arthur Powell, Eleanor Farrar, and David K. Cohen, *The Shopping Mall High School: Winners and Losers in the Educational Marketplace* (Boston: Houghton Mifflin, 1985), pp. 282–292.

13. Ibid., p. 213.

14. This theme is an old one in United States education. It is being picked up again in the wake of critical assessments of the most recent wave of educational reform. See, for example, William Snider, "Broader Focus Said Key to Next Wave of Reform Drive," *Education Week*, 22 April 1987.

15. On curriculum change, see, for example, Neal Gross, Joseph Giacquinta, and Marilyn Bernstein, *Implementing Organizational Innovations* (New York: Basic Books, 1971). On the 1950s curriculum reforms, see Powell, Farrar, and Cohen, *The Shopping Mall High School*, pp. 282–292. On administration, see Berman and McLaughlin, *Federal Programs Supporting Educational Change*.

16. Explaining the failure of reform has been an important theme in American educational research since the turn of this century, when reformers and commentators first noticed that instructional innovations were not having much effect. Such work picked up again in the early 1930s, partly as a result of worries about the schools' response to the strains of rapid growth and depression era constraints. And research on the impact of innovation developed into a sizable social science industry in the late 1960s, when a large and quite unprecedented program of national educational reform seemed to flag or flop.

17. See, for instance, Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962); Center for the Study of Public Policy, *Education Vouchers: A Report on Financing Education by Grants to Parents* (Cambridge, MA: Center for the Study of Public Policy, 1970).

18. Some reply that even if education were organized as a market activity, incentives would be relatively ineffective, for education does not have results that can be easily summarized in things produced, services performed, net sales, or profit and loss—unlike most private firms and some public organizations. Nor are production processes well understood or easily controlled by teachers or managers. As a result, strong market incentives might well produce confused signals, encourage teachers and students to do the simplest sort of work, or both.

19. Philip Cusick, *The Egalitarian Ideal and the American High School* (New York: Longman, 1983); Powell, Farrar, and Cohen, *The Shopping Mall High School*, chap. 5.

20. Ibid.

21. Powell, Farrar, and Cohen, *The Shopping Mall High School*, p. 213.

22. Frank Newman et al., *The Second Newman Report: National Policy and Higher Education* (Cambridge, MA: MIT Press, 1973), pp. 10–11, 40–41. See also the references in footnote 51.

23. In addition to these counterexamples, direct evidence on the effect of incentives is thin. The preceding sketch draws on the work of historians, organization theorists, economists, and other commentators. But these studies contain little direct evidence on the effects of incentives on teaching or learning. Instead, there are inferences (often large) from data collected for other purposes, data-free organizational theorizing, sociologically recycled economics, and interview studies in which direct testimony about motivation, commitment, and rewards is taken on its face. The skimpy evidence does not mean that incentives have no effects, but it certainly opens up doubt about the claims sketched previously. Note as well that incentives are the resource of the 1970s and 1980s: reform in these decades has focused on tighter requirements, improved social climates for achievement, and other noneconomic resources. Yet enthusiasm for the efficacy of these resources is no more solidly based than enthusiasm for those resources that were popular in earlier decades: more experienced teachers, better books, newer schools, more equipment, and the like. In fact, the current assumptions about the efficacy of incentives bear an eerie resemblance to assumptions about the power of "objective" resources in the 1950s and 1960s, just before the deluge of contrary evidence.

24. Ernest C. Moore, *The Story of Instruction* (New York: Macmillan, 1938), chaps. 3 and 4.

25. Frederick Eby and Charles F. Arrowood, *The Development of Modern Education* (New York: Prentice-Hall, 1934), pp. 71–72, 82–100, 128–137.

26. Ernst Cassirer, *The Philosophy of the Enlightenment* (Boston: Beacon Press, 1955), pp. 3–15.

27. See, for instance, Harry Broudy and John R. Palmer, *Exemplars of Teaching Method* (Chicago: Rand McNally, 1965), chaps. 4, 5, 6; Philippe Aries, *Centuries of Childhood* (New York: Knopf, 1962), p. 262.

28. Aries, *Centuries of Childhood*, p. 61.

29. Ibid, part II, chaps. 5, 6, 7.

30. Ibid.

31. These points are consistent with the testimony of those early reformers who sought to change traditional teaching. In the late eighteenth and early nineteenth centuries, Rousseau and Pestalozzi represented their child-centered ideas as unprecedented deviations from ancient practices of didactic lecture and mechanical recitation. British advocates of more gentle and child-centered instruction reported that rigid rote teaching was the rule there, four to six decades later. And contemporary American reformers of similar persuasion bemoaned the rigidity of teaching-as-telling, at about the same time. Although vanity may have inclined these innovators to play down the sources of their own inspiration, the evidence in their accounts is quite consistent with everything else we know about teaching at the time.

32. There was, in fact, a drastic tightening up of discipline in school as a consequence of the Reformation. See Aries, *Centuries of Childhood*, pp. 252–262.

33. See Eby and Arrowood, *The Development of Modern Education*, and Broudy and Palmer, *Exemplars of Teaching Method*, pp. 69–70. Medieval approaches to teaching seem to have begun as formal occasions in which instructors told knowledge to students. But the rise of scholastic philosophy, which focused much attention on the problems of harmonizing church teachings with increasingly diverse and secular knowledge, gave rise to new approaches, especially to formal disputation. This changed teaching, at least in some respects. Abelard, though celebrated in many modern accounts for his liaison with Heloise, was much more noted by contemporaries for his recognition of fundamentally contrary views of important religious issues, his efforts to harmonize these issues through a sort of dialectical method, and his brilliance in disputes with other scholars concerning these issues. The method of dialectic that he helped pioneer became central in scholastic philosophy. Disputation played a noteworthy and perhaps central role in university teaching in the twelfth and thirteenth centuries. Teachers seem to have employed it among themselves and perhaps in work with students, and students who wished to be certified as university teachers themselves (to become doctors) had to demonstrate their competence in disputation of a thesis that they prepared. It appears, however, that these forms became stylized and perhaps arid by the later Middle Ages. Disputation seems to have played no part in instruction in Protestant churches or schools.

34. Broudy and Palmer, *Exemplars of Teaching Method*, chap. 6; Aries, *Centuries of Childhood*, pp. 262, 266–268.

35. Robert L. Church and Michael W. Sedlak, *Education in the United States: An Interpretative History* (New York: Free Press, 1976), chap. 4.

36. See, for instance, David P. Page, *Theory and Practice of Teaching* (Syracuse, NY: Hall and Dickson, 1847).

37. Barbara Finkelstein, "Governing the Young: Teacher Behavior in American Primary Schools" (doctoral dissertation, Columbia University, 1970), pp. 13–101. See also the observations reported by Joseph Mayer Rice, *The Public School System of the United States* (New York: Century, 1893).

38. David Tyack, *The One Best System: A History of American Urban Education* (Cambridge, MA: Harvard University Press, 1974), pp. 177–216.

39. Although the social organization of instruction described here is not unusual, it is not inevitable either. Some societies have very weakly developed school systems, and in such cases, nearly all instruction is unspecialized. Other societies have very highly developed systems of schooling and child care, which sharply restrict unspecialized instruction. Some kibbutzim in Israel, for instance, deliberately have removed children from their homes and made child rearing a communal responsibility, carried out in separate facilities by somewhat specialized caretakers. Although the purpose was to reduce social inequalities and build community, one effect was to replace unspecialized parental instruction with more specialized and formal instruction by child care workers. There are similar developments in the United States, though for quite different reasons. Formal, institutional child care has greatly expanded in recent decades, in part as a result of more women working. An increasing fraction of children therefore receive appreciably less instruction from parents and appreciably more from teachers and from young peers. In some cases (home care, most obviously), informal instruction from child care workers simply substitutes for parents' informal instruction. But in other cases, children receive less informal and more formal instruction because they attend formal child care agencies that give a prominent place to schoollike teaching and learning.

40. Most academic research on instruction focuses on school instruction, as though researchers assumed teaching and learning were limited to academic establishments. Academic investigations of instructional innovation also have been restricted to schools. Researchers have considered change only in school instruction and have tried to explain nonchange only in terms of various features of schools' organization, management, or political economy. And they have done so despite all the evidence that popular influences on learning are very important, perhaps more important than academic influence.

41. See, for instance, Harvey Averch, Stephen J. Carroll, Theodore S. Donaldson, Herbert J. Kiesling, and John Pincus, *How Effective Is Schooling? A Critical Review and Synthesis of Research Findings* (Santa Monica, CA: Rand Corporation, 1972).

42. For example, Richard M. Merelman, *Political Socialization and Educational Climates* (New York: Holt, 1971), pp. 90–108.

43. See, for instance, Melvin L. Kohn, *Class and Conformity* (Homewood, IL: Dorsey, 1969), chaps. 6 and 7.

44. Opinion surveys regularly turn up large majorities of the population who express traditional views on matters of discipline, morality in schools, and teaching. The Gallup surveys, published periodically in *Phi Delta Kappan* for more than a decade, are the most accessible current source.

45. Kohn, *Class and Conformity*.

46. Aries writes, for instance, that traditional conceptions of childhood persisted, virtually unchanged, in the French and British working classes from the sixteenth and seventeenth centuries into the nineteenth century. The workers' social isolation from the aristocracy and upper middle class meant that innovative child-rearing ideas and practices, which originated among advantaged families, had little effect on workers. Medieval attitudes and practices thus persisted

virtually unaltered into the nineteenth century among most French and British families. See Aries, *Centuries of Childhood*, pp. 334–336.

47. Christopher S. Jencks and David Riesman, *The Academic Revolution* (Garden City, NY: Doubleday, 1969), pp. 12–27.

48. It seems likely that this pattern will not be eased by the current retorm movement. In fact, as "better" institutions get better still by tightening up teacher education requirements, their share of the teacher education supply will probably shrink, and an even larger fraction of the coming teacher force will be educated in the less selective institutions. It is thus quite possible that the net result of reform will be a teaching force that is less well educated, on average.

49. Heavy teaching assignments in the many institutions of mass higher and lower education offer many incentives to read little and write less. This difference in organizational mission and individual work greatly impeded the influence of ideas, produced at the center, on thought and practice at the periphery.

50. Jencks and Riesman, *The Academic Revolution*, chaps. 8–12.

51. Though there is a large literature on college teaching, in which it is agreed that most teachers lecture and that most do an uninspired job, there seem to be no surveys of teaching method. Two recent overviews of the field are William McKeachie, ed. *New Directions for Teaching and Learning* (San Francisco: Jossey-Bass, 1980), and Michael J. Dunkin, "Research on Teaching in Higher Education," in *Handbook of Research on Teaching*, 3d ed., ed. Merlin C. Wittrock (New York: Macmillan, 1986), pp. 754–777. For some historical observations, see Frederick Rudolph, *Curriculum: A History of the American Undergraduate Course of Study Since 1636* (San Francisco: Jossey-Bass, 1977), pp. 88–89, 94, 232–233.

52. Rudolph, *Curriculum*, pp. 275–276.

53. This section draws on a book in progress, tentatively titled *Teaching: Policy and Practice.*

54. The fit would doubtless depend at least partly on the strength of demand for therapists' services, but there seems to be no evidence on this point.

3

Constancy and Change in Schools (1880s to the Present)

Larry Cuban

The British historian Isaiah Berlin divided people who dealt with ideas into two kinds: hedgehogs and foxes. Hedgehogs are those people who pursue unrelentingly one idea. They grab and shake an idea, chewing and grinding it thoroughly before ever letting go. Foxes are people who leap from idea to idea, juggling many simultaneously, seldom staying long with one before scurrying to another. I am much closer to a hedgehog than a fox. The paradox of change amid stability (or is it stability amid change?) has nagged at me for well over a decade as a practitioner and academic, as a teacher and superintendent.[1]

One sign of my enduring embrace of this puzzle is a photograph I discovered in the National Archives while researching a book called *How Teachers Taught.* That photo intrigued me so much that I used it on the first page of that book and in a subsequent one called *Teachers and Machines*, which pursued the issue of durability in teaching practices. This photo captures for me the contradiction of change amid stability that we observe daily in our lives with a smile, an annoyed shrug, or a wink.

The photo was taken in 1927. It shows a teacher with a pointer