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ABSTRACT

The history of schooling is a mix of constancy and change in policies, organizational structures, school practices, and classroom pedagogy. Over the last century and a half, well-intentioned and serious reformers, using Federal, state, and local policies, tirelessly and repeatedly tried to improve schooling. Classroom and school practices such as lecturing, using textbooks, grouping by ability, and rating teachers' performance were present in the 1890s, the 1930s, and at the time that Title I of the Elementary and Secondary Education Act (1965) became law. Understanding what is constant and what changes in American classrooms and schools is essential foreknowledge for any policymaker interested in improvement. This paper provides a historical review of classroom organization, elementary and secondary school structures, conflicting district and state goals and policies. The structure of schooling and its effect on the poor and children of color are discussed. State efforts at school improvement are reviewed. Five lessons from state and Federal improvement efforts are drawn. The goals of reformers over time are analyzed. A brief list of references is included. (BJV)

THE WAYS THAT SCHOOLS ARE: LESSONS FOR REFORMERS

by

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THE WAYS THAT SCHOOLS ARE: LESSONS FOR REFORMERS

> An optimist is a person who sees a green light everywhere, while the pessimist sees only the red light . . . But the truly wise are color blind.
> Albert Schweitzer (1875-1965)

If colorblindness is wisdom in the above metaphor, amnesia is foolishness. Neither blind optimism nor pessimism is appropriate in making policies to improve the lot of children within organizations called schools. But memory is. Thus, to determine "the ways that schools are" requires a look at how schools are organized to carry out their assigned roles and a look through the rear-view mirror to see how they were. Policymakers, need both historical and organizational perspectives to inform decisions made on behalf of those without power to act, children, for example.

Avoiding Amnesia

Any informed trek through the history of schooling will quickly reveal two facts. First, schooling is a mix of constancy and change in policies, organizational structures, school practices and classroom pedagogy. Second, over the last century and a half, well-intentioned and serious reformers, using the blunt tool of Federal, state, or local policies, tirelessly and repeatedly aimed to improve schooling. These two facts frame any lessons to be drawn for the current crop of well-meaning, hard-working reformers.

Trying to improve schools is a great American passion. The expansion of tax-supported public schools in the early decades of the nineteenth century--a social reform movement itself--produced innovations such as compulsory attendance laws, the graded school, and the self-contained classroom which did much to shape the nature of classroom teaching and administrative practice in schools. Since then, wave after wave of serious men and women have tried hard to improve what children receive in schools.

The system-builders of post-Civil War America, such as city superintendents William Torrey Harris and William Maxwell, used the science of the day and the appealing example of corporate growth. They took unorganized districts and imposed a managerial order on schools and classrooms through a hierarchial structure, rules, and specified roles for staff to perform. The modern, graded public school with offerings in many subjects, a teacher for each self-contained classroom, a principal for the school, a district office with special services, and the offices of the superintendent and school board dates back to the closing decades of the nineteenth century. The rule-dominated bureaucracies these reformers built were intended to get masses of children to learn efficiently and inexpensively the skills necessary to best fit into the social order.

What they produced drew criticism from the next generation of reformers who found such systems regimented and inflexible, forcing both teachers and youth into rigid molds of behavior and performance. One group of pedagogical progressives such as Francis W. Parker and John Dewey urged a "New Education" for children. They tried to shift attention from a concentration upon society's needs to the individual child's growth and contribution to the community.

Another set of progressives, drawing from the same wellspring of reform, were more concerned about applying technology and science to the business of schooling children. The search for efficient management and teaching drove professors like Stanford's Ellwood P. Cubberley, Teachers College's George Strayer and the University of Chicago's Charles Judd to bring into districts the science of testing, modern ways of measuring progress in everything from teacher evaluation ratings to the proper veneer of wax on corridor floors. These two wings of progressives, interested in child-centered instruction and efficient management, dominated the language of instruction and administration in public schools through the end of World War II.

By the early 1950s, another generation of critics questioned the pedagogy, curricula, and assumptions of their elders. The Cold War and Russian achievements in space accelerated criticism of American science and math curricula. Federally generated policies launched new curricula, advanced placement, programs for the gifted, and the National Defense Education Act in an effort to add vitamins to presumably listless American schools.

Within a decade, spurred by the civil rights movement and federally supported efforts, another wave of reformers discovered the poor, ethnic minorities, and a schooling seemingly hostile to children who were then called the disadvantaged. In seeking remedies, some unknowingly reached back to the progressives in introducing child-centered approaches to schooling (e.g., informal or open education); some sought private alternative schools or urged public schools to tailor their offerings to ethnic preferences; others redoubled their efforts to apply rational approaches to management (e.g., Programmed Planning and Budgeting Systems). New policies, laws, and rules which spilled forth from Washington, D.C. and state capitals were targeted on improving what occurred in schools and classrooms. By the mid-1970s, however, this reform impulse was spent.

Since the late 1970s, another generation of reformers has focused upon restoring excellence to public schools by ridding them of what they viewed as excesses promoted by earlier policymakers (e.g., social promotion, few requirements for high school graduation, and little homework). In raising academic standards, demonstrating student productivity through test score results, and returning schools to such familiar traditions as homework and patriotic readers, this cohort of reformers leaned less upon Federal initiatives or funding and more upon state law, policies, regulations, and dollars.

This capsule history of periodic surges of reform aimed at school improvement takes little note of exactly what changed and what persisted over the last century. There is little doubt that over the last century substantial changes have occurred in the language used to talk about education, curriculum offerings, the design of school buildings, interactions between adults and children, and the organization and staffing of schools.

The city school of the 1890s had no gymnasium, lunchroom, library, or nurse's office; it had no counselors, reading teacher, or instructional aide; it offered few, if any, vocational courses, physical education, special classes for the handicapped, or the extracurricular array of activities so common in most schools now. In the schools of the 1890s, fear and rules were mainstays of the school. Corporal punishment was common; students stood to recite and would not dare leave their bolted-down desks without the teacher's permission. Today, students frequently move at will within the classroom and informal casualness prevails in many classes although the students know clearly who is the boss.

A century ago, few distinctions among students could be drawn other than that some were older than others; some were immigrants and some were native born; some were of color, and some were not; some were boys and some were girls. Intelligence testing and the battery of psychological tests were unknown a century ago. Today, the categories used by educators to distinguish children, go well beyond age, origin, race, class, or gender. The treatment of minorities, expanded access to programs for females and handicapped students--while still imperfect--clearly illustrate alterations in the ways that schools were a century ago and now. Indeed, substantial changes have occurred.[1]

Amidst these changes in policies, facilities, curriculum, and administrative practices much of what existed since the 1890s has proved durable. A dominant classroom pedagogy and persistent school routines, altered somewhat over time, nonetheless have endured in their fundamental forms until the present day. Classroom practices such as lecturing, using textbooks and worksheets, teaching the entire group, grading students' performance, penalizing misbehavior and assigning seatwork dominated teachers' repertoires then and now. School practices commonly done both then and now are grouping by ability, principals' sporadic monitoring and rating of teachers' performance, and the scheduling of time and space in such a manner as to keep students supervised by teachers continually while both were in a building.

These and other practices, I argue, were present in the 1890s, the 1930s, and at the time that Title I of the Elementary and Secondary Education Act (ESEA) became law; they have remained in place through the conversion of Title I into Chapter 1 until now. I further argue that understanding what is constant and what changes in American classrooms and schools (and why both exist as they do

over time) is essential foreknowledge for any policymaker interested in improvement. Why?

Because some changes alter the conditions within which teachers, subject matter, and children come together and some don't. Because changes in Federal and state laws, school board policies, and district office regulations get transformed, adapted, or ignored in schools and classrooms where principals, teachers, and students work. And because the final test of an intentional effort to improve what occurs between students and teachers is what happens 180 days a year, six hours a day in classrooms and schools—not when a bill is enacted, an appropriation made, a regulation written, a report submitted, or a multiple-choice item checked.

Distinguishing between visible changes in educators' vocabulary, course titles, and regulations and changes in school routines and classroom structures that shape practices is essential if policymakers ever wish to alter in significant ways children's performance and behavior.[2]

In this paper, I will initially describe the structural arrangements and expectations that began over a century ago which set the boundaries and shaped much of what occurs in classrooms and schools. I call these structural arrangements and expectations the DNA of schooling; they are imperatives built into the ways that time and space are organized in schools. They are elements that teachers and principals have learned to cope with and adapt to in order to discharge their obligations and gain what pleasures they could from work. Following this description, I will draw from research findings in organizational change and practitioner experience with Federal and state interventions to suggest lessons that policymakers should note when considering changes in Chapter 1 legislation.

DNA: The Classroom Organization

In the early nineteenth century, students who attended public schools were mixed in age and thrown together into one-room schools, where the teacher taught a half dozen or more subjects. In this climate, an innovation imported from Prussia by reformers seeking cheap, efficient ways to expand American education spread swiftly in urban districts. The novel idea of a graded school brought large numbers of students and teachers together into one building with eight or more classrooms. Students were divided by age into grades, teachers were assigned to certain grade levels, and subject matter was split into manageable chunks of content and spread among the grades. Each teacher had a separate class within the grade with specified subject matter and skills to teach. To mid-nineteenth century reformers, the graded school was a remarkable invention for improving education, by standardizing curriculum and instruction for all students while spending public funds in an efficient manner.

A century later, self-contained classrooms were condemned by reformers as counterproductive in achieving the complex goals of the modern school and for keeping teachers insulated and isolated from one another. Nonetheless, the self-contained classrooms has survived repeated assaults. Team teaching and open space architecture made temporary dents in its popularity, but by 1980, 95 percent of all classrooms remained self-contained.

Let us begin with a description of the room to which a teacher is assigned. Between 25 to 40 students, ages 6 to 16 are required to sit for 50 minutes to five hours daily, depending on their grade, for about 180 days a year. To observers unfamiliar with formal schooling, the first impression of a classroom is its crowdedness. Except in rush hour buses and elevators, no other public place contains as many people who are compelled to be there. Such a setting packed with young people of varying abilities and tastes imposes upon a teacher the fundamental obligation to maintain order.

Except in kindergarten and the primary grades, teachers cope with the crowd by organizing space in a limited number of ways. A teacher's desk, a table for the reading group in elementary schools (or a lectern in secondary classrooms), the chalkboard, and the wall clock usually dominate the front of the room. After the primary years, students generally sit in rows of movable desks and one-arm chairs facing the teacher. Minor variations in seating appear in circular, horseshoe, and hollow square arrangements. A less frequent seating pattern is where students sit at tables or clusters of movable desks facing one another. Except for science labs, art, home economics, and craft shops, these configurations are frequently seen in kindergarten and primary classrooms.

The typical rows-of-desks pattern lessens student contact with one another and foster one-way communication with the teacher. Moreover, within such an arrangement teachers can scan a room quickly to see who is or is not behaving properly.

If managing a crowd leads to common seating patterns, it also encourages whole-group instruction and reliance on one textbook. Teaching everyone the same thing at one time permits the teacher to manage the flow of information and maintain order simultaneously. Instruction in small groups, an innovation generated by turn-of-the century progressives, appears frequently in the elementary grades for reading and occasionally for math. In secondary schools, small groups appear in performance-based subjects such as laboratory science, shop classes, and art; in academic classes, the dominant practice is whole group instruction.

Teachers organize space, use time, and construct an instructional repertoire to meet the imperative of managing a crowd of students in an orderly, efficient, and civil manner. Each teacher alone, separated from peers and required to teach in isolation, invents ways of coping with the demands of the self-contained classrooms. These responses by teachers to students who are confined to a room in order to learn required subject matter and skills constitute

a practical pedagogy, the distilled experience of generations of teachers who have learned to cope with the structural imperatives over which they have no control. What occurs between teachers and children is shaped not only by the self-contained classroom and the graded school but also by the structures of elementary and secondary schools.

DNA: Elementary and Secondary School Structures

Substantial differences between the two levels of schooling exist in the size of the school, the content that students face in classrooms, the time allocated to instruction, and the external policies and expectations imposed upon each.

Elementary schools are smaller than secondary schools. Most observers label an elementary school large if it has more than five hundred students. While some elementary schools have over a thousand pupils, they are uncommon outside large urban districts. Secondary schools commonly have one to two thousand students, but sometimes as many as three or four thousand. Size differences in schools mean that hierarchies, specialization of function, and administrator visibility vary. Most elementary schools will have one principal and no other administrator. An average secondary school of 2,000 students will have one principal, three or four assistant principals, almost a dozen department heads who function as quasi-administrators, and a clerical staff that is the envy of an elementary school principal. Finally, differences in size affect student participation in activities and the quality, intensity, and frequency of contacts among members of the school community.

The place of content in the curriculum differs between the two levels of schooling also. Children in elementary grades learn fundamental verbal, writing, reading, and math skills. Content, while important, is secondary and often used as a flexible vehicle for teaching those skills. But in the upper grades of elementary school, and certainly in the high school, more sophisticated skills are required of students; these skills are wired directly to complex subject matter that itself must be learned. Literary criticism, historical analysis, advanced math problems, quantitative analysis in chemistry—all require knowledge of complicated facts and their applications. High school teachers of academic subjects adapt to the complexities of content, the number of students they face and the limited time they have with each class by concentrating upon whole group instruction, a single textbook, homework, and lecturing.

Also student and teacher contact time differs markedly between the two levels. While the self-contained classroom remains the dominant form of delivering instruction in both settings, elementary teachers spend five or more hours with the same 30 or more students. They see far more of a child's strengths, limitations, capacities, and achievements than high school teachers who see five groups of 30 students less than an hour a day. Over a year, elementary

teachers see their students nearly 1,000 hours; a high school teacher sees any one class no more than 200 hours during the year or about one-fifth of the time that elementary colleagues spend with pupils. Contact time becomes an important factor in considering issues of grouping, providing individual attention, varying classroom tasks and activities, and rearranging furniture. In elementary schools the potential to make instructional changes in these and other areas is present simply because the teacher who is responsible for five or more subjects has more contact time with the same children. Such potential is absent for a teacher of one subject with 30 students for a 50-minute daily period in high schools.

Finally, external pressures from accrediting associations, college entrance requirements, state mandates for graduation, and job qualifications have far more direct, unrelenting influence upon high schools than lower grade classrooms. Steady pressures on high schools come from Carnegie units, College Boards, employers, Scholastic Aptitude Tests, and certifying agencies that push teachers to complete the textbook by June, drive students to prepare for high-stakes exams, seek jobs, and take the proper courses for graduation. Of course, not all teachers and students respond in the same manner to these imperatives; variation in response is the norm. The point is that the pressure to respond is both persistent and intense.

While similar urgencies exist in elementary grades, particularly the press to get children ready for the next grade, the tensions seldom pinch as they do in the higher grades. More time is available in elementary schools. Flexible arrangements are possible. The second and third grade classrooms can be combined. Retaining students, e.g., keeping a kindergartner for another year rather than promotion to first grade, while uncommon, occurs more frequently in elementary than in high schools.

These three structural differences—emphasis on subject matter, contact time, and external pressures—fundamentally separate the two levels of schooling. One only has to spend time listening to seventh or ninth graders who are in the first weeks of making the leap from a six-grade or eight-grade elementary school to a secondary school to understand the ways that the different school structures impact their lives.

While these structural arrangements shape what occurs in classrooms and schools, schools are not islands; they are nested in district organizations (which, in turn, are nested within state systems of schooling). Both districts and states have intentions for what should happen in those schools and classrooms. What is missing from this description of the DNA is the district and state policies that further influence what teachers and principals do.

DNA: Conflicting District and State Goals and Policies

Goals

As a consequence of attending school, the public expects students to:

- master basic skills,
- think rationally and independently,
- accumulate general knowledge in various subjects,
- possess skills to get a job,
- participate in the civic culture of the community, and
- know what values are prized in the community and be able to live them.

Although the above goals are taken from state and local statements, there are other goals that are implicit, that lie in the shadows but nonetheless weigh heavily on public expectations. Schools should:

- house students safely 5 to 8 hours a day,
- shield the adult labor market from competition,
- sort students to fit different socioeconomic niches,
- equip students from low-income families with the means for moving into higher social classes, and
- solve persistent national problems (e.g. poverty, drug abuse, racism, defense).

The reach of these goals staggers the unfamiliar observer: creating social mobility, eliminating national ills, and preparing students for college and jobs are expectations that blanket public schools today. Yet the conflict among and between these formal and informal goals is evident. For example, schools should produce graduates imbued with community values who are also critical and independent in their reasoning. Such massive expectations and internal paradoxes echo persistently in state and district policies and permeate structures that set the boundaries for the school and classroom.

State and District Policies

State-mandated courses (e.g. four years of English, one year of U.S. History) and district requirements (e.g., computer literacy)

provide a scaffold for subject matter taught in classrooms. Teachers plan what content to teach, the materials to use, and what tests students should take within limits set by state and district directives. Goal conflict arises when teachers are expected to cover in 36 weeks content that would take twice as long, given the textbook. Moreover, district policies require teachers to grade students on their performance. In covering content and mastering skills, students receive marks on homework, class participation, quizzes, and tests. Grades are intended to mirror accurately student performance, but practitioners know that an "A" and an "F" serve other purposes as well (e.g., rewarding effort, penalizing lack of attention, and keeping order). Furthermore, if a district or state requires a semester- or year-end test, the teacher needs to complete content that would appear on it. The unrelenting impulse to cover subject matter wedded to a requirement to give grades helps to produce the practical pedagogy described earlier.

Furthermore, state and local mandates to use standardized tests also shape classroom instruction and school practices. With the passion for published test scores intensifying since the late 1960s, school officials have sought an alignment of district curriculum, textbook content, and classroom instruction with the content of test items. Some district administrators will realign content taught at certain grades to match what is covered on the standardized test. For example, they will move instruction on decimals from the sixth to the fifth grade because the test including such items is administered at the end of the latter grade. Aware of the increased weight placed upon national percentile ranks, teachers and principals rearrange school calendars to prepare students for high-stakes tests. Instructional tasks aimed at practicing for upcoming tests absorb large chunks of class time. Thus, standardized tests teach principals, teachers, and students what to expect from classroom instruction and school organizational arrangements.

These goals and policies, cross-cutting as they are, produce expectations among policymakers that what is adopted will be implemented faithfully, yet what occurs seldom yields the highly prized and eagerly sought uniformity in schools and classrooms. The disappointment that policymakers invariably feel over unfulfilled mandates matches the pressures that practitioners feel over being commanded to alter their behavior by those who have little sense of the workplace imperatives that govern their lives between 9 and 3 daily. Practitioners respond to these conflicting goals and policies, although the responses may be both unintended and unsought by policymakers.

The graded school, its classroom organization, the structure of the different levels of schooling, and conflicting local and state policies form the scaffolding of public schools. I use DNA as a metaphor to underscore that these man-made structures define to a large degree the workplace in which the familiar practices of teachers, principals, and students have become so evident to observers.

To press the metaphor slightly, just as scientists have begun to reconstruct, recombine the genetic material that constitutes DNA to

create new forms of life, the very basic forms of schooling can also be restructured into new forms. To do so, reformers must initially link goals and outcomes to the organizational arrangements that have arisen over time. If there is a mismatch between goals and outcomes and the mismatch can be attributed to familiar organizational arrangements, then framing the problem of improved schooling in terms of altering basic structures appears as a potentially useful strategy with which to begin.

Before moving to recent periodic efforts to improve schooling, I need to make clear that this DNA of schooling while evident in all settings has had special impact on the poor and children of color.

The Structure of Schooling and Its Affect on the Poor and Children of Color

Schools for immigrants, minorities, and the poor have been described frequently over the last century. Teacher accounts, journalists' visits, recollections of former students, and an occasional administrator's reflections document the special circumstances of classrooms and schools in which large numbers of children identified as different have attended.

In these classrooms, teacher-centered instruction with fewer variations, fewer hybrids of different practices, dominates both elementary and secondary schools. Maintaining order is the central task from which all else flows. The content and skills taught tend to be minimal, substantively different from what is taught in more affluent, non-minority settings. The emphasis is frequently on steering behavior toward what the teachers and administrators define as acceptable. Using conventional measures of school outcomes (e.g., standardized test results, attendance, suspensions, dropouts, college attendance) these schools dominate the bottom quarter of all rankings.

Yet, in most non-poor, non-minority schools, common teaching practices and structural arrangements seem to work. That is, the usual narrow measures of schooling place these sites in the middle or above average categories; most teachers and administrators seek to teach in these schools. This is not the case for places populated by the poor or culturally different.

The anecdotal and research evidence drawn from classrooms and schools of how teaching and administrative practices vary according to race, class, and ethnicity is ample. Teaching practices, such as asking questions, giving praise and blame, and distributing rewards in classrooms, have been correlated with differences in children's socioeconomic status. Secondary school practices, such as grouping students for different curricula and complexity of content taught in classrooms, show strong relationships with the level of family income—a proxy for social status.

Within such schools, cultural differences between teachers and principals representing a version of the dominant culture (English-speaking, white-collar values drawn from Western industrialized societies) intersect with students who may be non-English speaking, of a lower socioeconomic class, with non-Western or rural values or mixes of all of these differences.

In a few classrooms and schools, cultural differences become opportunities for increased learning for both adults and children; these become places where both adults and children share a common mission to learn, grow, and share in a community of a classroom or a school. The literature on effective schools has drawn attention to schools populated by low-income, ethnic minorities that moved from despair to determination, instances where socioeconomic and ethnic differences became less important than the overall goals of academic and social improvement.

In most settings in which urban and rural poor children are the majority, cultural differences lead to a cold war. Hostile participants eye one another suspiciously in hallways, across chairs and desks and engage in guerilla tactics prior to becoming school dropouts.

In short the structures of schooling described earlier have special impact upon children who are viewed as different from the mainstream. While some schools and classrooms make mighty efforts to achieve important but narrow ends (e.g., raise reading and math test scores, or to have more students take academic subjects) nonetheless they are limited by the classroom organization, elementary and secondary school structures, and conflicting district and state policies. For other schools where token change efforts are made or benign neglect is the rule, those structures become iron cages.

In discussing constancy and change in American schools and classrooms, I have concentrated upon those changes that have altered the face of schooling and those school and classroom practices that have endured. What has persisted for over a century are fundamental organizational arrangements initially introduced to produce cheap, efficient ways of schooling large numbers of children. Although goals have been added and altered, these structures have come to shape to a large degree what occurs in schools and classrooms.

Since 1965 when Federal policymakers launched ambitious efforts to improve schooling for underachieving children of the poor, repeated efforts by different bands of reformers have been undertaken to alleviate the effects of poverty. Given this perspective, it is now time to assess what has been learned from those efforts. Were these Federal and state policymakers optimistic seeing only green lights, pessimistic seeing only red lights or, in Schweitzer's words, were they the truly wise who were color blind?

First- and Second-Order Change

In the mid-1980s, the National Air and Space Administration (NASA) endured a number of grave setbacks with the tragic destruction of the Challenger shuttle and two unmanned rockets within three months. An agency that had soared with the successes of lunar landings and shuttle flights, with space walks and satellite repairs, staggered to a halt with the deaths of seven astronauts and two rocket failures.

With the public awareness of a complete performance collapse in a brief period, its new leadership had to define the problems clearly: Was the Challenger accident a design problem, or a lapse in quality control, or some mix of the two? Defining the problem became crucial since the definition charted the direction for changes in NASA's formal structure, relationships with government contractors, and a score of ripple effects. Similarly, for school reforms over the last century there is a need to determine whether school problems were defined as design or quality control issues.

It may help to initially make a distinction among planned organizational changes. First-order changes are reforms that assume the existing organizational goals and structures are basically adequate but that deficiencies in policies and practices need correcting. Engineers would label such changes as "solutions to quality control problems."

For schools, such changes would include recruiting better teachers and administrators, raising salaries, distributing resources more equitably, selecting better texts, adding new (or deleting old) courses to the curriculum, designing more efficient ways of scheduling people and activities, and providing more staff training. When such improvements occur, the results frequently contain the vocabulary of fundamental change or even appear as changes in core activities. Actually, they alter little of the basic school organizational structures for determining how time and space are used or how students are organized and assigned. First-order changes try to make what exists more efficient and effective without disturbing the basic organizational arrangements, without substantially altering how adults and children perform their roles. The compensatory education programs since the 1960s (including Title I of ESEA and Chapter 1) are instances of first-order reforms. The school effectiveness movement with its emphasis on high expectations, strong instructional leadership, academic performance in basic skills, alignment of goals with curriculum, texts, and tests is a recent example of first-order, planned changes.

Second-order changes, on the other hand, aim at altering the fundamental ways of achieving organizational goals because of major dissatisfaction with present arrangements. Second-order changes introduce new goals and interventions that transform the familiar ways of doing things into novel solutions to persistent problems. The point is to reframe the original problems and restructure organizational conditions to conform with the redefined problems.

Recombining what I call the DNA of classrooms and schools would be classified as second-order changes. Engineers would call these "solutions to design problems."

For schools it was a second order change to go from the one-room schoolhouse with one unsupervised teacher and a gaggle of children ranging in ages from 6 through 16 to an eight-room building divided into grades and a formal curriculum where a teacher is supervised by a principal. It happened throughout the nineteenth century in urban schools and the first half of the twentieth century in rural ones. An example of second-order changes in curriculum and instruction is when teachers and principals choose to embrace a pedagogy rooted in beliefs about children as individuals who need to learn to make their own decisions, as learners who need to connect what occurs outside the school with classroom activities, and as pupils who need to discover knowledge rather than absorb it. Teachers and administrators with such beliefs organize schools, classrooms, lessons, and curriculum consistently with those beliefs. Relationships with students, the utilization of space, and the allocation of time, shift in response to these beliefs.

The history of school reform has been largely first-order improvements of the basic structures (e.g., graded school, self-contained classroom with one teacher and 30 students, varied curricula, and 50-minute periods in secondary schools). On occasion, second-order reforms have been attempted (e.g., progressive pedagogy, non-graded schools, open-space architecture, and team teaching) without lasting effects other than residual adaptations to the contours of existing arrangements.

Researchers examining past efforts to improve schooling have found common characteristics to those first- and second-order reforms that were institutionalized as contrasted with those that left few or no traces. School improvements that endured were a mix of both kinds of changes with first-order ones dominant. They were structural in nature (e.g., graded schools in mid-nineteenth century America) created new constituencies (e.g., vocational educational courses, guidance counselors, and Title I teachers and aides) and were easily monitored (e.g., Carnegie units and raising certification requirements for teachers). The researchers concluded that second-order reforms calling for classroom changes such as team teaching, inquiry learning, open classrooms, core curriculum, and individualized instruction were installed and dismantled, barely denting existing practices (Kirst, 1983).

The last two decades have provided more illustrations of more first-order rather than second-order improvements. They have the full force of state and Federal law, ample dollars, and occasional arm-twisting. From the laws (e.g., National Defense Education Act in 1958, Elementary and Secondary Education Act in 1965, and the Education for All Handicapped Children Act in 1975), policies, and billions of dollars spent since the late 1950s, the kinds of changes

sponsored by Federal intervention that have lasted in states and local districts are as follows:

- organizational changes that created a new layer of specialists in programs that pull children out of their regular classes to receive additional help (e.g., remedial reading experts, vocational education staff, bilingual and Chapter 1 teachers);

- procedural changes that guarantee student rights such as due process (e.g., P.L. 94-142 mandated new procedures for working with handicapped children and their parents);

- pupil classification systems for categorizing children (e.g. limited-English-speaking, gifted and the handicapped);

- increased teacher specialization that produced new certification categories such as remedial reading, bilingual education, English as a Second Language, and classifications within special education for both teachers and aides; and

- expanded testing to determine student performance.

All of these changes were either rule changes, modifications of existing practices, or further staff specialization. The reforms created new constituencies and were easily monitored but they hardly dented the existing organizational structures. Little or no sustained impact on curriculum or classroom instruction appears to be have occurred from these Federal efforts.

Most consequences of Federal efforts to improve schooling suggest first-order changes. Schools were seen as failing to provide necessary resources, much less quality services, for certain populations and had excluded groups of children entirely. To promote quality, that is, provide an equal education, Federal policymakers tried to enhance schools as they were rather than altering substantially the structures, roles, and relationships within states, districts, and schools.

These first-order changes were far from trivial. Expanding equal opportunity in what needy children receive is a massive, if not intimidating, undertaking. The changes that have occurred from these Federal interventions have been superseded in the 1980s by activist state governments. They are filling the vacuum created by the ideology of the Reagan administration in reducing the Federal role in school improvement.

State Efforts at School Improvement

Others have analyzed the origins, spread, and content of state efforts to reform what happens in schools and classrooms. Spurred by

national reports on inferior education and its linkage to economic health, governors, legislatures, and superintendents mandated a longer school day, a longer school year, higher graduation standards, more standardized tests and tighter linkages between these tests and curricular content. Further, most states legislated higher entry-level teacher salaries and merit pay schemes, competency tests for new and veteran teachers and stiffer evaluation procedures.

Are these first-order or second-order changes? The attempted realignment of local/state relations is an effort to fundamentally alter governance relations. But, the bulk of the state improvement efforts try to make the existing system more efficient and effective, not disturb basic roles and arrangements in districts, schools, and classrooms. The historic design of public schooling instituted in the late nineteenth century, with all of its additions, remains intact. Thus, first-order changes seem to prevail in state interventions heavily loaded with bureaucratic measures targeted at reducing teacher and administrator discretion.

Note that I said "seem." Research and experience have yet to determine the cumulative effects of this recent surge of managerially driven state reforms aimed at school improvement. Until that knowledge surfaces, I suspect that at least two outcomes are probable. First, the measurement and rule-driven reforms will fail to achieve fully their intentions. Wiring curriculum and instruction to high-stakes tests will occur but the business of schooling is for teachers and administrators to make daily decisions about other people. Such human judgments cannot be programmed by others or routinized into a set of rules for all to enact.

In schools, there is a long history of token compliance with external mandates while stable core processes within classrooms persist. Anyone familiar with teacher use of technology knows that machines can be bought, even delivered to schools and placed in teachers' rooms. None of that assures serious use of the advanced technology. Anyone familiar with large bureaucracies knows the ways that principals can comply minimally with district office directives if they find them too intrusive or disruptive for their schools.

A second outcome may well be the partial success of these first-order changes in driving certain teachers and administrators to do pretty much what the policymakers wanted. In some settings where previous reforms have failed to improve students' performance, such as inner-city schools, district administrators will push to put these mandates into practice.

In some school systems the process is underway. Curriculum is rewritten. Scripts of units and lessons for teachers are produced. Superintendents inspect principals; principals inspect closely whether teachers are teaching what is supposed to be taught. Teachers inspect students through frequent testing. Evaluations of superintendents, principals, and teachers are linked to how well implementation of directives are carried out.

These first-order changes tighten linkages, producing a more efficient schooling that the system-builders of the late nineteenth century would have applauded. Yet such actions raise the strong possibility that what is absorbed by students may be what is tested, i.e., low levels of skills and discrete bits of information, and the broader goals of reasoning, problem solving, and enhanced self-esteem remain unachieved. Such instructional management systems already exist in Washington, D.C., Atlanta, Georgia, and many other districts. Texas and California are two states that have moved aggressively in that direction.

In states driven to raise standards and student performance on standardized tests, state departments of education try to insure compliance by the hundreds of thousands of teachers, the tens of thousands of principals, and the hundreds of superintendents and school boards. Rivers of paper, occasional inspections, newspaper exposes, complaints, and the publishing of district and school indicators, tell the governor, the legislature, the commissioner of education and state board of education, the degree of compliance.

Not unlike the bold attempt by Federal policymakers to realign their relationship with state and local agencies to effect improvement in classrooms, few can predict with confidence how long such reform energy can be sustained. Let me now consider these largely first-order changes undertaken by the states and Federal government over the last two decades and ask the straightforward question: "What has been learned from the Federal and state experience about improving schools that might be of use to those interested in improving the schooling that disadvantaged children receive?"

Lessons from State and Federal School Improvement Efforts?

From the enormous body of research findings and practical experience accumulated by teachers and administrators, I have extracted what I believe are primary lessons and converted them into guiding principles for policymakers interested in school and classroom improvement, especially for those schools enrolling large numbers of underachieving poor and minority children. My experience as a teacher and administrator in urban districts, wedded to my research and knowledge of the history of school reform, acted as filters in choosing these guiding principles.

1. Teaching and administration varies within and among schools. Do not prescribe what should occur in those classrooms and schools. What teachers in classrooms and administrators in schools do daily is make decisions about other people. They deal in human judgment. To a great extent their actions are shaped by the general structural arrangements within which they work. These actions are also influenced by the particular conditions, the time that events unfold, and the beliefs and experiences of these teachers and administrators. At some general level

clear similarities exist across contexts, time, and beliefs. But classrooms, schools, and districts differ enough in these factors to give pause to anyone who is bent upon generalizing about what should be done.

Because of these inevitable variations within and between schools, it is impossible to prescribe policies from afar, that is, from state and Federal offices that tell teachers and administrators what they must do about curriculum and instruction or in operating a school. In short, in the face of rich variation in performance there is no one best system of teaching or administering for policymakers or practitioners to adopt.

2. Improvement is tied to each school site. Anyone familiar with schooling knows the palpable differences between schools in the same neighborhood. Informed parents shop for schools, not classrooms.

With all of the criticism of the effective schools movement and its research from both academics and practitioners, one fact has stubbornly emerged as unquestioned: substantial changes that touch the inner core of classroom activities occur at the school site where principal and teachers work together with students to achieve common aims. The literature on effective schools has underscored the importance of building commitment to goals among those who do the work and holding them responsible for outcomes. The intangibles of a school culture that prizes achievement for both adults and children repeatedly turns up in anecdotes by practitioners and research findings. In effect, the organization that can alter teacher and student behavior most directly and in a sustained fashion is the school.

3. In order to produce enduring improvements at the school site, teachers and principals require a larger degree of independence than is now granted by local and state agencies. The impulse to control continues to permeate much thinking about change among policymakers. Policies aimed at teachers and principals, especially in inner-city schools, offer little formal autonomy in making decisions about the organizational conditions within which they work. Yet school-site decisions spell the differences in how faithfully district, state, and Federal policies are implemented.

Reform by remote control, that is transforming classrooms and schools through regulations is a familiar strategy practiced by governing bodies. It will yield compliance at some level with easily monitored procedures and the production of paper but will do little to alter the core activities that occur in the workplace.

The more formal discretion for teachers and administrators is in contrast to the negative freedom common in organizations where infrequent supervision occurs and people essentially do what they like, although they worry about bosses showing up unexpectedly. In my argument, I assume that no pool of immense imagination is simply waiting to be tapped at the local level. Nor do I assume that teachers and administrators have a monopoly on goodwill and knowledge of what is best for children; any romantic ideas I may have held eroded in watching my colleagues over the last three decades. I have seen altruism and racism; I have seen fiery engagement with ideas and anti-intellectualism; I have seen colleagues sacrifice money and time for their students and seen others fuse their interests in higher salaries and fringe benefits with the best interests of children.

Yet, these teachers and administrators are all we have. They do the work. They need to be helped. They need to be seen as potential heroes who perform essential social tasks that cannot be regulated from afar. A better balance than exists now needs to be struck between expanded autonomy for teachers and administrators and ways of demonstrating accountability to the larger community.

4. Effecting change depends on what the on-site implementers think and do and the quality of help they receive. The process of adopting, implementing and institutionalizing school improvements aimed at changing what teachers and administrators do is heavily dependent upon their:

- understanding of what it is that needs to be done;
- commitment to doing what is intended;
- having the discretion to make alterations in the changes;
- tailoring the desired improvements to the contextual conditions of the setting; and
- having tangible, sustained help and resources to put into practice the improvements.

The sum of these guiding principles adds up to a reliance upon the infantry of reform, the men and women who staff schools, not the policymakers who legislate and exhort but seldom enter a classroom or school to see the results of their laws or sermons. If proposed changes that are intended to alter what occurs in classrooms are to have a sustained effect, that is, to achieve second-order changes with the educationally disadvantaged of the nation, they must come to grips with the existing organizational structures in elementary and secondary schools. Hence, my final

principle for reformers deals with the question of the level of schooling at which intervention should occur.

5. The site level that offers the potentially highest gain for improvement for those students most in need is the elementary school. The size of elementary schools and how they generally structure time, space, and student assignments permit more innovation, flexible curriculum, teacher-administrator collegiality, and joint decision making than the current size or organizational arrangements in secondary schools.

   The combining of grades in classrooms, team teaching, school-wide staff and curriculum development, and collaborative decisionmaking will be observed more often in elementary than secondary schools. Moreover, elementary schools with younger students who have extended contact with only a few adults are able to influence student values, knowledge, and skills in many more ways than secondary schools can with older youth.

All of these guiding principles which I have converted into lessons for reformers say nothing about the goals of reform. Implicit in this analysis is that policymakers and practitioners who wish to improve schooling share similar goals. Because such an assumption is flawed, let me now discuss how these guiding principles fit some goals far better than others.

Reformer Goals and Schooling Structures

Policymakers determined to reform schooling have differed among themselves for decades as to what is desirable. Some have sought increased efficiency in spending public funds; some sought enhanced effectiveness in student performance as measured by standardized achievement tests; some wanted more scientists and engineers. Others wanted schools where intellectual engagement prevailed; others wanted schools where students reasoned critically and solved problems; others wanted schools to take on parental functions such as teaching children proper sexual behavior, the evils of drug abuse, and how to get a job; and others wanted schools where even the slowest and least able student achieved. Among reformers, then, goals expanded, became complex, and were paraded past the public. So what?

Inspired by reformers filled with pocketfuls of intentions and driven by varied conceptions of what schools should do over the last century, a jerry-built architecture of schooling, a jumble of old and new blueprints for the efficient mass production of schooling arose. Different reformer goals produced graded schools and self-contained classrooms, promotion policies, Carnegie units, 50-minute periods, vocational and sex education, and mandated achievement tests. All were once novel solutions to problems reformers had defined and put into practice.

Over the decades these and other reforms created a Rube Goldberg machine called American schools that were ill-designed to achieve a growing parade of vastly different and contradictory goals. Each generation of policymakers and reformers added goals and organizational mechanisms designed to achieve specific aims. The total effect of these innocent, helter-skelter designs stacked one atop another is a disorderly array of intentions and structures mismatched to certain broad goals for both children and professionals.

The mismatch can be observed in that some aims are consistent with the existing organizational arrangements that have characterized schooling for over a century and some are not. No sandpaper is needed to smooth out the rough edges between what is desired and what can be done within schools when more homework, longer school days, compensatory programs and stiffer graduation requirements are enacted into new rules. These first-order changes fit easily into the scaffolding that frames schooling now.

Goals that are considered important by reformers, researchers, policymakers, and parents are ones that call for students to be treated as individuals and to learn to think for themselves or ones that seek an engaged practice of citizenship or ones that strive for developing a sense of caring for others. Such goals have little chance of achievement within the current structures of schooling except in those instances where extraordinary people overcome the consequences of these structures.

Consider the conflict between the goal of increased reasoning skills and existing structures of schooling. Corporate officials, governors, legislators, superintendents, and district officials share in common the goal of cultivating critical thinkin and problem solving in the youth of the nation. National repor repeatedly emphasize the need for graduates of public schools to be flexible, independent thinkers.

But recent state mandates wedded to the existing structural conditions within schools and the practical pedagogy that teachers invented to cope with those conditions are in conflict. Regulations that detail curricular content, specify textbooks, and assess student performance through multiple-choice test i as pour molten steel over that practical pedagogy. The core repertoire of instructional practices finds students listening to lectures, doing worksheets at their desks, reciting from textbooks, and seldom asking questions. Such work demands little application of concepts, little imagination, and little intellectual engagement.

Those who would argue that reasoning and problem solving are commonly taught in the schools need to produce evidence that such skills are taught separately or embedded in a discipline; that they are displayed openly, systematically, and persistently within classrooms; and that they are frequently practiced. Of course, such teaching does occur in different places. It is uncommon, however.

Eager reformers, unaware of how practical pedagogy arose in response to difficult working conditions and of the dulling effects of such practices on students' reasoning skills, have repeatedly exhorted teachers to teach students to think. Teachers are caught between using a repertoire that works (given the structures within which they work) and responding to reformers' pleas.

This dilemma has no simple solution. It will not be ended by glitzy materials aimed at producing thinkers, special courses for teachers on how to teach reasoning, new multiple-choice items that supposedly assess students' "higher order thinking skills." To teach inner-city students to reflect, to question, and to solve problems, teachers must at least work in settings that allow them ample time and resources to engage in these kinds of activities with students and with each other.

If policymakers desire to have the children of the poor increase their reasoning and problem solving skills, they would need to see clearly the fundamental conflict between school structures and this important goal and then move to realign those commonplace, unquestioned structures to a different pedagogy. To align the classroom setting to teaching that centers on the student's mind, one that concentrates upon cultivating intellectual engagement and student involvement, reformers will have to begin with the organizational imperatives that largely govern teachers routines, that determine the use of time and space in schools and classrooms, and that shape how and by whom instructional decisions are made. If policymakers become aware of the mismatch between goals and structural arrangements, the DNA of schooling, and if they strive to achieve goals such as improved reasoning skills for inner-city children, they begin the journey of reforming schools for the poor (Cuban, 1984b).

These guiding principles are useful when they fit goals embraced by those who seek to improve what Chapter 1 can do for the underachieving poor and children of color. The overriding implication of all these guiding principles and their linkages to goals is clear. Federal or state strategies of school improvement that have goals aimed at changing complex behaviors in children and adults in schools and classrooms should focus less on control and regulation through existing structures and more on incentives and help for those who make on-site judgments to transform those organizational imperatives to reach those desirable goals. In doing so, state and Federal agencies will need to increase schools' capacity to do what they need to do, while holding them responsible for outcomes.

But in schools there is a structural dilemma over autonomy and accountability. In ending this paper, I need to discuss briefly this dilemma.

The conventional means of holding teachers and administrators accountable at all levels of government is through rulemaking. Fiscal regulations, for example, call for the production of paper trails that can be monitored in periodic audits. Program regulations and procedures that require the keeping of records and submission of

reports are monitored by occasional inspections but more often by systematic examination of the documents. It comes as no surprise that reports in triplicate, files holding records, and massive collections of data that often go uninspected, much less used, fill offices in school districts. This is the common manner of holding educators accountable.

Accountability can also be documented by concentrating on outcomes such as test scores, dropout rates, and similar markers. By examining such numbers, educators and non-educators can supposedly determine whether teachers and administrators have met their responsibilities. Focusing upon outcomes has decided benefits for policymakers with fewer benefits less apparent for those who work in classrooms. Some policymakers have wedded this concentration upon results to the sharing of these outcomes with the public through publishing school-by-school test scores and other performance comparisons using varied measures. The premise is that teachers and administrators will become more responsible if results are available to the community. Undesirable outcomes would trigger community pressure for improvement. This is accountability by bullying. The substantial negatives linked to concentrating upon outcome measures and having them become public signs of success have already begun to emerge.

Another approach to accountability is to simply render an account. Describing what occurs in classrooms and schools, and calling attention to exemplars and misfits, contributes to what teachers and administrators see as their responsibility. Exemplars are recognized; misfits and incompetents are handled. Informally, this occurs in schools and districts where there is sufficient pride in what happens and self-confidence to forthrightly and fairly deal with the exceptions that perform unacceptably. It is uncommon, however.

Also uncommon in public schooling is collegial responsibility. It is rare for teachers to work with teachers to improve performance. Except for occasional schools where solidarity among teachers arises informally and beginning efforts to introduce peer review occur, little of this collegial responsibility exists in public education.

The dominant manner of accountability remains regulatory with occasional mixes of other approaches. In ending this discussion of accountability, I want to make clear that regulations accompanied by familiar forms of accountability are often necessary as a governmental response to certain social problems of injustice, health, and safety. Local agencies may neglect such issues and in a Federal system, another governing body may need to intervene. The point is that a balance is necessary between local, state, and Federal agencies that permits sufficient discretion to those delivering a service while monitoring performance in a flexible manner. It is no easy task to strike that balance, but attention must be paid to it nonetheless.

The primary implication of this discussion of accountability and guiding principles is the need for strategies of school improvement that focus less on control through regulation. Instead, more atten-

tion should be placed on vesting individual schools and educators with the independence to reach explicit goals and standards with flexible and fair ways of holding educators responsible.

These lessons and guiding principles suggest that there is an important, even critical, Federal and state role in improving schooling for the disadvantaged. Reformers anxious to help the needy children of the nation must see that role with singular clarity. Somewhere between the green light of the optimistic change-maker and the red light of the pessimist is the flashing yellow signal that colorblind and wise reformers see in the schools and classrooms of the nation before they act.

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FOOTNOTES

1. See, for example, some histories of public schools by David Tyack (1974) and Michael Katz (1971). Various portions of this analysis are drawn from my writings on this topic over the last few years. The most recent is How Teachers Taught (1984).

2. Milbrey McLaughlin and Richard Elmore (1984) distinguish between policy, administration, and practice and argue that policies as tools for school improvement are blunt-edged, constantly being reshaped by administrators and teachers.