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**Organizational Effects on Learning:
A Conceptual Model and Research Review**

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ABSTRACT

Although learning is usually seen as determined by teachers and students, learning may be strongly affected by organizational context. Policymakers' neglect of powerful influences outside the classroom may explain why many classroom reforms have been ineffective, and why analysts are caught in the trap of blaming two actors — students or teachers — while failing to notice larger outside influences. This paper suggests various organizational influences that may affect learning, identifies relevant studies, and proposes a general framework for a social science research agenda on these issues.

The paper considers four levels of organizational failures that may potentially affect learning — (1) within schools (classroom atomism), (2) between schools and other schools over time and space (organizational gaps), (3) between schools and surrounding institutions (contextual conflicts), and (4) between schools and later institutions (incentive failures). Since American schools are particularly ineffective in educating disadvantaged students, this paper focuses particularly on the harmful effects on children from disadvantaged families. It suggests conceptual approaches and research questions that are fundamental to understanding educational outcomes and to improving the effectiveness of school reforms, which educators themselves sometimes derisively term “Christmas ornaments.” If this model is correct, policy can have a constructive impact, but not if it is done in the customary reforms that increase fragmentation. Research on these issues can improve understanding of organizational influences on learning and reduce organizational barriers to disadvantaged students.

ORGANIZATIONAL EFFECTS ON LEARNING: A CONCEPTUAL MODEL AND RESEARCH REVIEW

INTRODUCTION

By focusing within classrooms, researchers and policymakers have traditionally viewed the learning process very narrowly. They have studied the influences of factors within classrooms, but they have ignored a large number of powerful influences outside the classroom. This perspective may explain why many classroom reforms have been ineffective, unsupported by the larger context, and sometimes even counterproductive. This essay will suggest various organizational influences that may affect learning, identify some isolated studies that have focused on some questions, and propose a general framework for a social science research agenda on these issues. It outlines conceptual approaches and research questions that are fundamental to understanding educational outcomes and to improving the effectiveness of school reforms, which educators themselves sometimes derisively term "Christmas ornaments."

Although learning is usually seen as the product of the actions of teachers and students, learning may be strongly affected by organizational context. Indeed, in the extreme, even the very best efforts of excellent teachers may unintentionally be undermined by organizational features, harming achievement outcomes. In a more usual situation, organizational context may contribute to the achievement difficulties that arise from ordinary teachers' customary efforts. In focusing on organizational influences, this essay is especially concerned with the possible discontinuities and conflicts that may arise within and between various social units. The social organization within schools, between schools, and between schools and other institutions affect the quality of teaching and learning, teachers' and students' expectations, continuity and accumulation of learning over time, and peer and parent influences. While the instructional process between teachers and students is certainly important, these larger organizational features may have an enormous impact that could undermine or enhance the learning process. Educational reforms that neglect these potent influences miss the bigger picture and may even fail totally.

When we narrowly focus inside classrooms, we are caught in the trap of blaming two actors — students or teachers — so our reforms are narrowly directed at these two actors, and not at larger outside influences. The mistake in this approach is evident in the following two examples. Some distinguished educators, seeing the persistence of low achievement in inner-city classrooms have concluded that students are incapable of learning (Herrnstein and Murray 1994). However, taking a broader perspective, the superintendent of the Chicago public schools, Paul Vallas, wondered whether the poor health-care system for low-income children might affect learning. Testing all failing students, he discovered that 30 percent of these students had poor eyesight; he provided eyeglasses to 20,000 students, and their achievement improved. Although the finding seems consistent with a model that blames low achievement on students' deficiencies, it is not. The failing is not students' poor eyesight itself. Many middle-class students also have equally poor eyesight, but this disability does not harm their achievement, because the health

system gives them access to eyeglasses. The underlying problem here is institutional, a failure of the American health-care system to provide eye tests and glasses to low-income students. If we wish to discover the underlying causes of students' poor school performance, it is necessary to look at organizational features outside the classroom.

Taking a narrow focus on the classroom, many observers blame teachers. Recent federal legislation, "No child left behind," provides an example. This legislation is premised on the assumption that teacher quality is a main determinant of learning, and the best way to create educational gains is to eliminate bad teachers from classrooms. This legislation requires higher standards for teacher certification— precisely the kind of policy that comes from focusing only on the classroom level. However, this approach may be ineffective, or even counterproductive. Many urban schools are already facing a severe teacher shortage, and they have adopted a stopgap policy of hiring many non-certified teachers. These non-certified teachers are not considered regular staff, they are "fill-ins" until certified teachers can be found. The new legislation will make it harder to get enough regular teachers. It will either increase the number of fill-in teachers, or it may prevent this stopgap procedure, and many classrooms will have no teachers. By focusing only inside the classroom, and doing nothing to improve the supply of teachers, we are likely to channel resources to ineffective reforms, which may even be counterproductive. Which teachers enter the classroom is determined outside the classroom by a number of organizational features that federal legislation totally ignores. Until those features are changed, federal legislation will not improve the supply of high-quality teachers.

If we try to understand learning only by looking inside classrooms, we will miss some of the most important factors affecting learning. In the first example, even if the Chicago schools had spent an additional \$5,000 on each student's instruction, they might have gotten less improvement than they got from spending \$50 to purchase new eyeglasses. In the second example, policies to limit the supply of teachers during a teacher shortage are likely to be harmful. This essay will examine a multitude of outside-the-classroom factors and speculate on the possible ways they may influence learning.

While some of this essay is based on research, much of it is speculative, based on sociological theory, practitioner reports, and some personal observations of schools. It does not contend that we know whether and how these organizational levels influence learning. Indeed, the contention is the opposite. There is much we do not know, and sadly, many of these questions are not even being studied. Researchers mostly are looking inside classrooms, and very little research is looking at how learning is affected by organizational factors outside the classroom. Similarly, following the lead of researchers, policymakers are proposing policies directed inside the classroom, ignoring the impact of the organizational factors outside the classroom. In most cases, their proposed policies will not improve outside the classroom factors, and in some cases they will actually do harm.

Two important disclaimers must be noted. First, this essay seeks to present a wide range of organizational issues that need to be considered, built on important work by psychologists. Stigler and Stevenson, Steinberg, Eccles, and others have suggested influences that occur "Beyond the Classroom." However, this essay extends their work to new issues and focuses more on sociological and organizational issues, particularly ones that may affect disadvantaged

students and can be altered by policy actions. A review of all relevant literature is beyond the scope of this paper.

Second, to provide coherence in this analysis, this essay proposes a general perspective on the larger organizational context of schools. This perspective contends that organizational discontinuities may harm learning, especially for disadvantaged students, and this model suggests a number of potential organizational discontinuities that might have such effects. As this essay indicates, this is a powerful model in that it suggests a great variety of research issues. It is possible to take a different view on these issues. Reducing organizational discontinuities requires what sociologists call "tight coupling," which potentially can have undesirable consequences, such as creating rigidities, unresponsiveness to reform, and preventing professional discretion at lower levels (i.e., depriving teachers of autonomy in the classroom). In addition, some might contend that students need to learn to cope with discontinuities, since American society is full of discontinuities.

The primary task of this essay is to propose research issues about organizational features and their possible influences on learning. The model in this essay does that and provides justification for why these research issues might be important. While the model also suggests hypotheses about the effects of organizational factors, these specific hypotheses are merely speculations. They are testable, and, when tested, they may be refuted. What is important is not the specific speculations, but rather the fact that research, and policy, are now largely overlooking the possibility that learning is affected by organizational factors outside the classroom. This essay seeks to identify possible organizational influences on learning that need to be examined by research.

The following sections consider four organizational levels and potential organizational failures that may potentially affect learning:

1. The social organization within schools — classroom atomism
2. The social organization between schools and other schools over time and space — organizational gaps
3. The social organization between schools and surrounding institutions — contextual conflicts
4. The social organization between schools and later institutions — incentive failures.

Each section will raise a number of conceptual and research questions about these organizational influences and the problems that may arise from organizational failures. It will suggest hypotheses about the ways that these various organizational failures — classroom atomism, organizational gaps, contextual conflicts, and incentive failures — may affect children. Since American schools are particularly ineffective in educating disadvantaged students, this essay will focus particularly on the harmful effects on children from disadvantaged families. It is my hope and belief that research on these issues can lead to improved understanding of organizational

influences on learning and reduce the educational disadvantages currently experienced by these children.

1. CLASSROOM ATOMISM — SOCIAL ORGANIZATION WITHIN SCHOOLS

Basic features of the social organization of schooling are well-known, but their impact is rarely considered or questioned. We take these features for granted, as if they were inevitable and immutable, so we tend not to see them, even though they are omnipresent and have major influences on the operation of schools.

Curriculum is defined as an organized course of study. It implies various kinds of organization. The term implies that courses will have continuity over time, coordination across courses within a term, and perhaps coordination with activities outside school.

However, in spite of this assumed organization of curriculum, many features of schools are disorganized. Schools are "loosely coupled," composed of isolated components that fit poorly with each other, creating discontinuity in the curriculum and in students' experiences. As noted below, curricula and classroom demands are not formally coordinated, and teachers lack ways to create informal coordination. There is more coordination in some subjects than in others.

Despite the many federal, state, school board, departmental, and administrative influences determining the school curriculum, a great deal is left up to individual teachers. Teachers can determine how the curriculum is presented to students and how students are assessed throughout the year. While school districts dictate the choice of a primary textbook, teachers can choose how to allocate time within the textbook, proceeding more slowly in some sections than in others. Few teachers complete all lessons in these large textbooks. In addition, teachers can select ancillary books and additional materials that are not dictated by the school system. Teachers report that they assess students' capabilities and adjust the pace of curriculum according to what they feel students can handle. Often teachers will create subgroups within the same classroom, and different subgroups will proceed at different rates, based on teachers' assessments of students' capabilities and needs. When judged in terms of individual students' needs, such teacher discretion may be appropriate. However, given this highly individualized approach, we have to wonder how well it is synchronized with students' instruction in other courses in the same school day or with subsequent coursework in the next school year.

There is some indication that the coordination from year to year is problematic, and it varies by subject matter. Research by Susan Sodolsky (1988) indicates that math is better coordinated than English or history from year to year. Students do not learn multiplication until after they learn addition. In contrast, regardless of what textbook and curriculum are dictated by the school system, English curricula from year to year may shift from an emphasis on grammar, to reading, to creative writing, and back to grammar in somewhat random fashion, depending on the preferences and approaches of individual teachers who happen to teach each grade.

Research needs to examine what kinds of continuity and discontinuity students experience as they move from year to year and encounter different teachers. Moreover, it is

important to study the effects of certain combinations of sequences. For instance, if students go through several years where spelling and grammar are deemphasized, does that make it less likely that any teacher would be willing to try to make up the deficiency? If the teacher tries, does the teacher encounter resistance from students and parents who have gotten the impression that spelling and grammar are uncreative and unimportant?

Scheduling of classes also imposes constraints. These constraints may create discontinuities, limit students' options, and create track and grouping misplacements (Hallinan, 1994).

Autonomous Teachers

Similarly, we assume that the teacher's job is invariably atomistic, that teachers do their job entirely within their classroom, and that teachers inevitably must be isolated from one another (Lortie, 19). Research by James Spillane (2002) indicates that teachers are not necessarily isolated. Teachers discuss students and curriculum with other teachers, department heads, and principals (Gamoran, Secada and Marrett 2000; Bidwell 2000), and some teachers are more influential than others, yet this teacher interaction is unsystematic and sporadic.

In contrast, the social organization of teaching can be quite different in other nations. Americans have designed the job of teaching so teachers spend a great deal of their time in classrooms. American teachers spend an average of 954 hours a year inside the classroom, 50 percent more time than the average for the other OECD countries — 635 hours (OECD 2000, p. 229). Although that means that Americans get more student contact time for each dollar we spend on teachers' wages, are there any disadvantages to this arrangement?

Important research issues are suggested. Are American teachers more isolated than teachers in Europe or Japan, where there is more time and opportunity for interaction outside of class? What are the benefits of giving European and Japanese teachers time for class preparation, organizing curricula, talking with other teachers, and seeking advice from other teachers? How do teachers spend their time in Europe and Japan? How do teachers interact in these countries? How does such interaction affect teacher authority, teacher morale, and job turnover? Are there instructional benefits of their interaction and how is the time used?

Beyond subject matter content, research needs to study other dimensions of the "implicit curriculum." Are there mismatches and poor alignment on other dimensions—work habits and social skills? Students must learn a great variety of work habits and social skills in classes, and these may not be specified explicitly, or coordinated across classrooms or years of school (Farkas 1996). What work habits and social skills are students expected to have in class? What are the specific expectations for what students are expected to do in the first minutes in class to prepare for class activities? What are the norms about behavior, talking, amount of homework, and how to do homework? How are students expected to respond to a problem that they encounter? What problem-solving skills are they taught? How long a span of time are students expected to be able to concentrate on a task?

In Japan, elementary school children are taught very clear work habits and study skills

over the first years of school (Stevenson and Stigler 1992). These habits and skills give students a way of approaching their work and solving problems. They also protect students from defensiveness and sense of failure when they have difficulty with a problem. Given the lack of explicit curriculum on these issues in the United States, different children may experience different expectations and training on work habits and study skills, and may experience different patterns of exposure to them. Some students may learn them early and consistently across their first grades of school, others may learn them early but inconsistently across different years or different teachers; some students may learn them late, and other students may not learn them at all. What are the learning consequences for these different patterns in terms of academic achievement and attitudes towards learning?

Given the multitude of forces determining subject matter content and method, the many aspects of work habits and social skills that may be taught, and teachers' lack of opportunity for coordination, we have to wonder: Do our schools really have a coherent curriculum in actual practice? How do lessons build on each other? In a single school day, what is the relationship between what a student learns in the first hour and in the second hour? Between one semester and the next? Between third-grade and fourth-grade? How do modular "short-term" courses affect coordination over the school year? These questions raise important organizational issues. These subtle issues are built into classroom processes, but problems arise because of poor coordination among classrooms. The ineffectiveness of a particular teacher's approach may arise, not from personal failure but because other teachers have radically different expectations.

Disadvantaged students may be particularly affected by these issues. Students whose families have different cultural norms, different languages, or less familiarity with schools are likely to need the most assistance in understanding what school expects. Inconsistent expectations across teachers and over time are likely to be confusing, and poorly educated parents may have difficulty resolving the confusion. Moreover, many of the schools these students attend have high teacher turnover, so that the same course may be taught in different ways from year to year. In addition, the high mobility of disadvantaged students means that students may experience contradictory expectations in the same subject within the same school year.

Research is needed to consider these issues, yet our research paradigm is often poorly designed to do so. Based on the assumption that learning occurs in classrooms, research tends to occur inside classrooms between September and June. Such short-term research ignores long-term effects on students, particularly about the effects of discontinuity across classrooms or the accumulation of learning from year to year. Given the high degree of autonomy by individual teachers, we might wonder whether students will experience a high variation from one class to the other, and from year to year? How well synchronized is the curriculum from year to year? We might also wonder whether the pace and nature of the curriculum might vary by classroom, subject matter (math or English), school, school district, or state? If such variation exists, to what extent is it due to teachers and to what extent is it due to administrative decisions? How does this discontinuity affect students' learning over long periods of time, and does it have different effects for disadvantaged students?

2. ORGANIZATIONAL GAPS — FALLING BETWEEN THE CRACKS OVER TIME AND SPACE

Vertical Organizational Gaps — Social Organization Between Schools Over Time

One of the obvious organizational features of American schools is that they are divided into separate levels, which are located in separate buildings and often administered separately. An organizational approach would ask how these separate units influence students' learning.

Educators sometimes notice such influences. When educators say that "students fall between the cracks," they are referring to an organizational phenomenon. Researchers should be examining the coordination of curriculum and social relations across different school buildings—from preschool to elementary to junior high to high school. When students make these transitions, they experience discontinuities (cf. Lee 2000; Eccles 1999). There are changes in curriculum content, teaching methods, the number of teachers students encounter, the nature of teacher relationships, and the nature of peer relationships. For instance, in the transition from elementary to junior high school, students move from a highly personal relationship with a single teacher who knows them very well, to a more anonymous identity where they are judged on impersonal, universalistic, and meritocratic criteria, by a large number of teachers who know the student less well than their elementary school teachers did. Junior high separates students more explicitly by tracking, which in turn breaks up and separates friendships. Many students lose status — no positive identity is carried forward. At the same time as students lose social status, they face harder courses and curriculum method changes. They also lose contact with their former teachers, who had come to appreciate students' personal strengths, including nonacademic strengths. Although some reformers argue that schools need to reinforce multiple skills (Gardner 1993), the organization of junior high schools makes this more difficult.

At the same time as this fragmentation occurs, schools increasingly view students in a fragmented way— on abstract impersonal criteria based on academic skills as they proceed into junior high and high schools. This differs from the approach in elementary schools. In elementary schools, a single teacher sees the same students most of the day, so teachers can identify and encourage some skills or interests of the students who do poorly in academics. If students try their hardest and still don't meet teachers' standards, elementary school teachers may detect students' other strengths and provide a supportive positive identity. Having built this fragile positive identity with a teacher in elementary school, students lose it when they move to junior high, where they must start over. In junior high and high schools, students' time with a teacher is limited to one hour or less, and teachers may have more difficulty identifying the strengths and interests of students with academic difficulties. Students are evaluated solely on academic performance on the particular subject matter. As Talcott Parsons (1959) noted long ago, schooling increasingly entails a shift in social identity as students move from being judged on particularistic (personal) to universalistic objective criteria. Children are increasingly judged by impersonal criteria as they move from loving parents to a single first-grade teacher, and then to six or more junior high teachers. As this happens, children may see themselves and be seen by others in a more fragmented way, along a few impersonal dimensions, with other aspects and strengths being ignored.

Besides the fragmentation of relationships and identity, the *organization of time* is also increasingly more fragmented as students enter higher level schools. By junior high, students change classrooms every hour, disrupting sustained activity, social order, and social relationships with teachers and peers. The calendar is also more fragmented. The academic term creates course changes after 12 weeks, and some schools have modular courses that create frequent teacher changes every 6 weeks. Such fragmentation may have benefits, but it also may have costs. In what ways do students' experiences become fragmented and discontinuous over the school day and school year? To what extent do these changes create learning problems?

These fragmentations in students' relationships with teachers and peers, in students' identity, in time and in activities are a direct consequence of the social organization in junior high schools, and the fragmentation increases even more in high schools. What are the effects of these organizational fragmentations on students' learning? Do they require new social skills and working skills, and do some students have greater difficulty coping with these fragmentations? What alternative forms of organization are available for junior high and high schools, and do less fragmented organizational forms create fewer problems for some groups of students?

In the folklore of the teaching profession, junior high students are often viewed as impossible to teach. Although the folklore contributes these difficulties to raging hormones of early adolescence, some research suggests that these difficulties do not arise in some nations that have less fragmented organization, even though adolescents in that society have the same hormones (LeTendre and Rohlen 2000). One might speculate that organizational fragmentation, not hormones, explains the difficulties of a large portion of junior high students. This speculation could be tested by looking at variations in the organizational transitions of various junior high schools in the United States.

Taking the opposite point of view, one might contend that students need to learn to adjust to such discontinuities, especially as they get older. While this is certainly true in the abstract, it is not certain what specific age is the right one, or whether some students are not ready for these discontinuities as early as others. One might speculate that many students are prepared to handle these discontinuities when they get to junior high school, and only a fraction of students are not. If this is the case, research needs to examine to what extent these discontinuities create problems for students, which students experience problems, and whether any procedures can be used to reduce students' difficulties with these discontinuities. All students must eventually be inoculated with this kind of experience, but some students must have their immune system built up before they are prepared to take the inoculation.

In particular, we may wonder whether disadvantaged students may have more difficulty coping with this fragmented organization. Basil Bernstein (1975) has hypothesized that students from working-class and lower-class backgrounds are less familiar with universalistic relationships, and they will have difficulty communicating in such relationships. Disadvantaged students may have less experience in meeting strangers, they may be more anxious with strangers, and may be slow to develop relationships. While many educators have speculated that the academic curriculum presents difficulties for disadvantaged students, it is possible that school organization and its fragmentation may also be a source of difficulty for disadvantaged students.

Horizontal (Geographic) Organizational Gaps

The school curriculum is affected by legislative, executive, administrative, bureaucratic, and professional organizations, each of which operates at the national, state, and local levels.(Kirst,). Various administrative levels inside a school lead to variations (Bidwell, 2000; Gamoran, 1987; 1998). These diverse influences insure democratic input, but reduce consistency. Moreover, since the federal influence is small, most influences are decentralized at the state and local levels, and there is a high degree of variation across local schools (Peterson, Rabe, and Wong 1986).

This decentralization is expensive. Every state devises its own curriculum and practices anew. For instance, in the new accountability movement, each state has had to figure out its procedures and tests. Some states have been in a great hurry or have sought to economize by selecting off-the-shelf tests (e.g., California), and then they subsequently discovered that this shortcut led to inappropriate measurements. In some cases, a norm referenced test was selected. Only after it was administered and scored did the reformers realize that the test was not useful when it "discovered" that 50 percent of their students scored in the bottom half of the test, or that the test was unrelated to the school curriculum. Other states, such as Massachusetts, created committees of teachers in each subject matter who met over long periods of time to select appropriate test items, to reject versions of the test and send them back to the test constructors, and to review new items. This procedure was very expensive in time and money, and it created a vastly better test than those purchased by other states, but it only serves a single state.

A great deal of policy discussion and education focuses on the issue of cost. It is continually a mystery why educational researchers find that American schools spend more money than most other nations, yet we often have inferior outcomes (Bishop 2002). Yet a system where educational R&D is done in 50 different states may be one of the reasons for the high cost and low effectiveness. Indeed, no American corporation would decentralize its R&D in such a way, and private for-profit schools, in particular, have highly centralized development of curriculum. The cost of decentralized curriculum development raises questions that deserve serious inquiry. For instance, it is not clear if the extensive efforts in some states (e.g., Massachusetts in the above example) have any influence or benefits for the other 49 states, and research should consider the question.

This decentralization may also have educational consequences. Besides the changes of school that all students experience as they get older, many students experience changes of school because of geographic mobility (Swanson and Schneider 1999; Catsambis and Beveridge 2001). Because school attendance is determined by residence, geographic moves create changes of school. Since curriculum is determined locally, children experience big discontinuities in curriculum when their families move to a different residence.

American education is highly decentralized, and there is little coordination across schools. This may have been unproblematic in an earlier era. Even when pioneers moved, they settled into a single location and did not continue moving, and children's education was not prolonged over more than a few years. However, in the dynamic housing and labor markets of the current era, mobility is probably more common, and education lasts longer, so education may

be more likely to be interrupted by residential moves.

Although Americans take local control for granted, that is not the way education is organized in many nations. These nations have a national curriculum centrally designed and administered in the same way across the nation. In Japan and in France, the same lesson is taught in every school across the nation on the same day (Rosenbaum and Kariya 1989). In a Chicago suburb, there is a Japanese school for the children of Japanese citizens working in Chicago. Like every school in Japan, the Japanese school in Chicago is staffed and run by the Japanese Ministry of Education, and the Chicago school teaches the same lessons every day that are being taught in Tokyo. Students whose parents' jobs forced them to move from Tokyo to Chicago experience no curriculum disruption.

In contrast, an American student whose parents move a few miles across the Chicago border into a suburb will experience a radically different curriculum. In one study, honor roll students in Chicago elementary schools found themselves several grade levels behind their classmates when they moved to suburban schools (Rubinowitz and Rosenbaum 2000). Social classifications also differ. Some students were identified as having learning disabilities after they moved from city to suburban schools. Students whose families were randomly assigned to various suburbs were much more likely to be classified as learning-disabled if they moved to certain kinds of suburbs, but not to others (DeLuca and Rosenbaum 2000). The luck of the draw determined whether a student was classified as learning-disabled and whether that student got additional assistance.

Moreover, disadvantaged students may be especially harmed by geographic mobility. As we note later, low-income families experience a great deal of geographic mobility, sometimes making several moves in a few years. Moreover, they lack the resources to attend private schools, which might buffer the effects of mobility for affluent families. Social class-related geographic mobility may pose additional difficulties that reduce the achievement of disadvantaged students. This will be discussed more in the following section. Thus, local control of school curricula may be very costly to the achievement of students who experience geographic mobility, especially for disadvantaged students.

These factors suggest many research questions. How do various kinds of moves and various durations of moves influence students' achievement? What are the effects of moves within the same school district, across adjoining school districts, across schools in the same state, and across schools in different parts of the nation? Within the same state, the curriculum should be the same, but it often is not. Within the same metropolitan area, it may not even be the same. National data indicates achievement differences between suburbs and city schools (cf. Rosenbaum 1995).

Research should examine students' experiences when they change schools. What kinds of curriculum disruptions do students experience when they change schools, and to what extent are students affected by these discontinuities? What social policies are helpful to students in making these transitions?

It is possible that moves between two elite high schools may not be as disruptive as

moves from ordinary to elite high schools. For instance, one might speculate that a student in advanced placement classes who moves from Scarsdale to New Trier high school may not experience much disruption. This conjecture is suggested because the top students at these two schools tend to do equally well on competitive examinations such as the advanced placement exam (however they may get these high scores in different ways and showing different competencies). If they are similar, it may be because the advanced placement exam helps to define the curriculum, because teachers in the two schools are similarly trained, or because both schools use similar textbooks. It is not clear whether ordinary schools serving working-class students are also homogeneous, or whether they have more variation among them. It is also not clear what forces create homogeneity across the curricula in different regions. Textbooks, teacher training, professional organizations, or examinations could provide some continuities, although each of these has a great deal of diversity within it.

There is a popular conception that the only serious discontinuity is between inner-city schools and all others (Kozol 1996). This certainly is the most extreme discontinuity, but it is not the only one. Moreover, if as we have suggested, disadvantaged students are more vulnerable to harm by discontinuities, and as we suggest later, disadvantaged students are more subject to housing conditions that compel frequent moves, then the discontinuities among ordinary schools may have great impact on disadvantaged students, even those who do not attend the worst urban schools.

How does geographic mobility affect students in other countries, like France and Japan, where the national curriculum is identical in every school in the nation. In these countries, students still experience social disruptions of friendships, but they will encounter exactly the same curriculum. Research should examine how geographic mobility affects students in these countries.

Recent federal legislation will lead to statewide examinations in grades 4-8. Depending upon the kind of examination, and the organizational responses of schools, this legislation could lead to more uniformity across schools within a state. Conceivably, if there were coordination among states, that could lead to a more general uniformity in the nation. Research should be attentive to these questions.

3. CONTEXT GAPS—SOCIAL ORGANIZATION BETWEEN SCHOOLS AND SURROUNDING INSTITUTIONS

Schools are the most visible organizations influencing children's lives, but students spend only a small fraction of their lives in schools. At the end of each school day, school week, and school year, students go back to their homes, neighborhoods, activities, and peers, which may influence their capacity to learn when they return to school.

Americans are rightly disturbed by persistent findings that education differs by social class and ethnicity, and policymakers have focused on reducing those inequalities by altering schools. Policymakers keep introducing new school reforms to reduce these inequalities, and with each reform, they often find that disadvantaged students benefit less than others, so the gap persists or even grows (not always, Smith 1998). Each time this happens, some observers

assume that the problem is inside the students. Some prominent psychologists even assert that the cause comes from genetic defects, which cannot be observed, while they ignore environmental influences that are easily observed.

Policymakers rarely examine the institutions outside the school which may affect students' school performance. Could students' problems arise in the home, in the neighborhood, in their poor physical or mental health? An organizational approach must ask whether social class and ethnic differences in achievement are due to other surrounding institutions and whether social policies to reduce educational inequalities should be focused on schools, or on other institutions— health-care, housing, welfare system, jobs, neighborhoods, or after-school activities?

Health

While Americans blame schools for educational inequalities, we rarely blame the health-care system. Few educational researchers have examined the educational consequences of inferior health. Poor children are more likely to have serious illnesses that keep them out of school. Poor children lose 30 percent more days of school each year than non-poor children (Starfield 1982). Even when they go to school, poor children may have difficulty benefiting from it. They are twice as likely to have iron deficiency anemia and asthma and to have severe vision impairment as non-poor children (Starfield 1982, 1997).

Housing Subsidies and Hunger

Children from families who received housing subsidies spend a higher proportion of their incomes on food, and their children are less likely to have abnormally low weights for their age than children from waiting-list families (Meyers 1995). Giving all children equal opportunity in school is unlikely to lead to equal achievement outcomes if low-income children come to school hungry, ill, and unable to see the blackboard. Schools cannot operate in isolation from other societal institutions.

Housing Subsidies and Mobility

A high rate of geographic "mobility generally keeps children of lower SES from attaining their normally expected achievement and grade level"(Wang and Gordon, 1994). Comparing children from families with incomes below \$10,000 and over \$25,000, 30% of the poorer group have attended at least three different schools by third grade, but only 10% of the non-poor group had done so (GAO 1994). Mobile students lose continuity of instruction, they experience social dislocations, and they often cannot gain access to special programs that require time-consuming diagnoses and eligibility requirements (GAO 1994).

Housing Subsidies and School Stability

Illness and mobility not only hurt the ill and mobile students, it also hurts other students in high-illness schools and high-mobility schools. In such schools, teachers must continually devote instructional time to reviewing lessons, integrating new students to classroom procedures, and breaking down instruction into shorter segments. High mobility undermines the efforts of liberal

and conservative approaches to school reform. While liberals urge urban schools to implement sophisticated progressive reforms, which involve complicated preparation over many months, and conservatives urge accountability schemes which test achievement gains over time, neither can be implemented in high-mobility schools where less than half the students remain for the entire school year.

Welfare Reform

Welfare reform policies have achieved dramatic gains in getting adults into the workforce, and off public assistance. While some claim that the change will improve adults and children in some ways, this remains an open question. What is certain is that single parents who are working will have less time to supervise their children. There are some indications that these working mothers are fairly effective at getting supervision for young children, but they may be less effective in doing so for teenagers and preteens (Morris, et al. 2001), perhaps assuming that these children are old enough to take care of themselves. It is important for research to examine that assumption, and see whether these children are more likely to get into trouble, into gangs, and into drugs. In addition, research should examine whether these children spend less time on homework, or have more difficulty getting help with homework. At a time when school reform encourages parents to spend more time supervising their children's homework, welfare reform is encouraging parents to leave the home and take jobs that make it more difficult to spend time supervising children.

Two-Career Families

As increasing numbers of middle-class women have entered full-time jobs, more children may be coming home to an empty house. Although affluent families can afford after-school activities and after-school supervision, they may assume that teenagers can take care of themselves. The same problems described for low-income families are also real risks for upper middle-class and middle-class children.

Neighborhood Effects

Both statistical and experimental studies indicate that low-poverty neighborhoods improve the educational outcomes of low-income individuals (Aaronson 1997, Duncan 1994, Haveman and Wolfe 1996, Rosenbaum 1991; Sampson et al. 1997). Reviewing the statistical research, Turner and Ellen (1997) conclude that "[Studies] following infants during their first years of life find that having more affluent neighbors is associated with higher IQ at ages 3 and 5, after controlling for family attributes" (Brooks-Gunn et al. 1993, Duncan et al. 1994; Turner and Ellen 1997, p.9; Brooks-Gunn et al. 1997). In a quasi-random-assignment experiment (Gautreaux), suburb-movers are more likely to complete high school than city movers (95% vs. 80%), to be in college (54% vs. 21%), and to attend four-year (instead of two-year) colleges (27% vs. 4%; Rosenbaum 1995). In the random assignment MTO program in Boston, children in the two experimental groups (MTO and Section 8) are more likely to read for enjoyment and less likely to have classes where discipline problems of other students interfere with educational process than control group children (Katz, Kling, and Liebman 1997, Table 10). In the Baltimore MTO study, children in the MTO and Section 8 groups improved in test scores compared with the control group

(Ludwig, Duncan, and Ladd 2001). Children ages 5 to 11 in the experimental group were 18 percentage points more likely to pass the reading test, roughly double the rate of a control group. No test score differences are seen for teens, perhaps implying that moves may have less effects as children get older.

The magnitude of differences, especially in the Gautreaux and Baltimore MTO studies, is much larger than one usually sees in ordinary school reform programs. Yet in both studies, no special efforts were arranged in the schools. It would appear that residential mobility has the potential to lead to larger achievement gains than school reform programs. From a policy perspective, it is possible that one can get better academic achievement gains by putting money into residential mobility than by putting money into ordinary school reforms.

The number of affluent families in a neighborhood is thought to translate into better day care centers, preschools, playgrounds, and adult supervision and monitoring. Neighborhoods also affect other outcomes that may influence education: reducing pregnancy (Turner and Ellen, 1997), behavioral and mental health problems and asthma (Katz, Kling, and Liebman 1997), and danger (Rubinowitz and Rosenbaum 2000, p. 94; Hanratty, McLanahan, and Pettit 1997; Katz, Kling, and Liebman 1997). In the Gautreaux program, students who moved to suburbs were more likely to do homework with classmates after school (Rubinowitz and Rosenbaum 1999). While suburbs are often thought to provide more opportunities, these children found that the suburbs offered fewer opportunities to hang out on the streets, to get involved in gangs, to sell drugs, and other negative activities.

Research needs to examine how residential moves affect these outcomes, and whether similar processes may be possible without moves. Moves affect many processes. They also define the social composition of classrooms which may affect classroom processes. For instance, if concentrated poverty increases the incidence of disturbed children, what is the effect of 1, 2, 3 disturbed students on the rest of the class? What are alternative ways that schools handle disturbed children and what are the impacts of each organizational practice on the rest of the student body? Can tracking isolate children from these effects and, if so, which forms of tracking?

Institutional Arrangements for Parent-School Interaction

It is generally recognized that parents can assist their children's learning (Epstein and Sanders, 2000). As a result, parent involvement has been a popular issue for school reform. Various school reform efforts are discussed later in this paper. However, parent involvement may vary across ordinary schools, and it may be influenced by institutional practices.

For instance, many schools encourage parent involvement by giving parents frequent information about students' performance, their strengths and their problems. In the study of families who moved from city to suburbs, many suburban movers noted the increased information they got about their children when they went to suburban schools (Rubinowitz and Rosenbaum 1999). Parents reported that suburban teachers regularly send information home about their children's performance, and in some cases they require parents to look over students' school assignments and teachers' evaluations, sign the work, and return it to school. Parents

report that suburban teachers commonly notify them about children's problems in school, while this was rare in city schools. We do not know if these differences are generalizable, and if so, why they occur.

Some critics have speculated that urban teachers don't care about students, suggesting that apathy is the cause of their inaction. However, other interpretations are possible. Do urban teachers assume that parents don't care, and, if so, what makes them make that assumption? Or do urban teachers worry that parents may get angry, attacking them or complaining about their evaluations? Newspapers report incidents where parents attack teachers, and although they are rare, only a few attacks might be sufficient to discourage teachers. It is also possible that teachers lack any means to communicate with parents. Children experiencing problems in school are not good conduits of information in any neighborhood, so other means are necessary. However, social institutions in poor urban areas may reduce communication. Many low income families do not have telephones, and many change residences frequently, making phone numbers outdated. Moreover, postal delivery in housing projects is often very poor and un dependable, and mailboxes are broken into regularly. In addition, as noted, welfare reform and two-career couples may make parent involvement more difficult. Teachers may infer parent indifference in many cases where communication has not actually taken place. Research is needed to identify the incidence of parent involvement across ordinary schools, to examine the reasons why it is or is not done, and what external institutions influence the practice.

The Summer Gap

The summer vacation is an institutional feature of American schools that actually contributes to the context conflict and to the disadvantages of low-income children. The summer vacation in American schools is longer than in many other countries. Research has shown a decline in achievement over the summer, and this decline is especially great for low-income students (Heyns 1975), probably because of the differential activities of affluent and non-affluent children over the summer. It is possible that this gap might be reduced by providing enriched activities for low-income children and by other institutional practices. For instance, Japanese teachers give homework assignments over the summer, and assignments are graded in the following school year. These assignments provide ways for students to retain their familiarity with the school curriculum and to practice math, reading, and writing skills. They also provide information about students to their new teachers. Research should examine how other nations deal with long vacations, and their effectiveness in reducing the summer gap. Some American school systems have begun using summer school to reduce this gap. Summer school is often used for students who fall behind during the school year. However in some cases, summer school is used for enrichment to help students make accelerated progress or to allow students to move to a higher academic track (Rosenbaum 1999). Research is needed to examine these and other organizational practices and their effects.

4. INCENTIVE FAILURES — SOCIAL ORGANIZATION BETWEEN SCHOOLS AND LATER INSTITUTIONS

Perhaps the least obvious organizational impact on learning is the impact of *later* institutions.

We usually look for causal influences in the past or present, not in the future. But schools are forward-looking institutions whose purpose is to prepare young people for later careers. High schools are defined by their organizational context. High schools can help students to plan the direction of their lives, to see payoffs to school effort, and to see what steps they can take to attain their goals. However, recent changes seem to have undermined the perception that high schools can help students achieve desirable goals, and a result has been the perception that students' efforts in high school have no payoff for their future careers.

Youths have always had difficulty entering adult society, but the process has become more difficult in recent decades. Over the last 40 years, three revolutionary changes have dramatically changed the way students become adults. First, the labor market has dramatically increased its skill demands, while reducing the real earnings for those with less education. Second, college became much more available, and community colleges (a minor factor in the prior generation) radically increased in enrollment. Over the past 40 years, while enrollment at four-year colleges doubled, enrollment at community colleges increased five-fold (National Center for Education Statistics 1999). The third revolution was perhaps the most remarkable. Community colleges undertook a revolutionary policy of open admissions. Unlike most four-year colleges, community colleges opened their doors to admit all interested students regardless of their prior academic achievement. Any high school graduate could attend, even with barely passing grades. Sometimes students do not even have to be high school graduates or have GEDs.

These three revolutions radically changed the rules of college and the labor market. They give students dramatically new opportunities. However, as with all revolutions, such dramatic changes are difficult to understand, and educators have formed mistaken beliefs and pursued misguided practices. Without any public decision, American high schools have quietly adopted a new informal policy, what I've called the "college-for-all" policy— which assumes that all students are college-bound, regardless of prior achievement, effort, or interests (Rosenbaum 2001).

This new policy has led to serious misconceptions that have serious implications. Educators and students take some facts for granted that are actually not true. They assume that all students with college plans are college-bound students, so they don't need preparation for work. That assumption is empirically incorrect. Some college-bound students are really work bound— about a quarter of college-bound students have poor grades, and despite their college plans, they have an 86 percent chance of entering the labor market with no degree above a high school diploma (Rosenbaum 2001). Educators assume that all students in college are college students. That's not correct. Some college students are not really in college— some students are taking many remedial courses that give no college credit. They will not complete a two-year degree in two years, as they are planning, and only 20 percent will attain college degrees (Deil and Rosenbaum 2002). Some college-bound students do not realize what actions they should take to make their plans come true— they coast through high school, confident that they can enter open admissions colleges, but unaware of their poor prospects in college, and failing to take actions that would improve their prospects of getting college credits or a college degree (Rosenbaum 2001).

On the other hand, policymakers assume that the labor market's increased skill demands

means that all good jobs require college. Actually many good jobs only require solid ninth grade academic skills; however, many high school graduates lack ninth grade academic skills (Murnane and Levy 1996; Rosenbaum 2001, chapter 5). Similarly, students and many faculty assume that students' behavior in high school does not matter in the work world. Many work-bound students do not realize that high school graduates can get jobs with good career prospects and that some high school behaviors can improve their long-term career outcomes. Educators kindly delay giving students job preparation to avoid forcing them into premature choices, yet these delays may backfire, if students later must take stigmatizing job training programs.

These misconceptions lead to incentive failures— they prevent students from seeing their likely outcomes and seeing constructive steps they could take to improve their career prospects. These misconceptions lead to what we have called "incentive failures"— students fail to see incentives and payoffs for actions they can take to improve their prospects in college and careers. Incentives actually do exist, but the poor interfaces between high school and college or work prevent students from realizing that these incentives exist. As a result, students fail to take advantage of these opportunities. Later, they may eventually realize what they missed, but by then it is too late, and they blame themselves.

A prior NRC report expressed serious concerns about high-stakes testing (Heubert and Hauser 1999). The opposite is also a concern. Policymakers should worry about low-stakes situations— circumstances where students' efforts have little impact on the future, or at least students believe that is the case. As the above discussion indicates, incentives may exist, but if students do not see any payoff to their school efforts, or if they do not believe the cliches their teachers tell them about the importance of school effort, then students will not take advantage of opportunities they are offered in school. Contrary to Heubert and Hauser (1999), instead of being frozen in anxiety because of high-stakes, they will be complacent, and student complacency can be as damaging as anxiety.

Moreover, while the NRC *High Stakes* report focused on the forms and uses of testing, the report had relatively little to say about organizational features. The report spent a great deal of time talking about choices of tests, but it said little about the choices policymakers could make to alter organizational arrangements to reduce the stakes, without totally eliminating them. This essay contends that the level of stakes is a variable, and high stakes can be reduced by adding organizational procedures that reduce the implications of any particular selection. Programs that give second chances, programs that give additional resources, programs that avoid stigma, programs that offer new kinds of instruction, programs that are minimally separated from others, and programs that are of short duration reduce the stakes of selection, while not completely eliminating incentives. Such manipulation of organizational forms is rarely considered, yet it offers an important policy option. Some sociological research has identified the dimensions of selection systems (Sorensen 1987; Gamoran and Weinstein 1998; Gamoran and Berends 1987; Rosenbaum 1976), but a great deal more research is needed in this complex area.

Failures occur when students have difficulty making the transition between high school and these later institutions, which depends on the selection criteria and procedures of the later institutions, how well high schools are synchronized with them, and whether there is a relationship between them. Organizational relationships between high schools and employers or

colleges can have a large impact on students' motivations to learn. These relationships can inform students about realistic goals, the payoffs to their efforts, and steps they can take to obtain their goals.

REFORMS

The deleterious influence of organizational fragmentation and discontinuities has been a general theme of this essay. Unfortunately, many school reforms have only compounded these problems. Many school reforms suffer from the same fragmentation and discontinuities this essay has noted in existing school practices. Reforms are often conceived as piecemeal and are unrelated to existing practices, teacher competencies, parent competencies, and other contextual influences.

Piecemeal reforms may make the problem of coordination worse, not better. Idealistic reformers devise new improved programs, but these reform programs are isolated and uncoordinated. Tests are a way to create coordinated goals, but tests are often uncoordinated with school and classroom curriculum, and reforms often alter tests or curriculum without altering both together. Reformers create what educators have termed, "Christmas ornament programs"—shiny isolated ornamental programs that have no relationship to each other. Even the federal government, which imposes universal requirements on its programs, makes its programs serve specific targeted populations, so that students may experience discontinuity if they qualify for one program, but not another.

Sometimes the problem is that reformers create the programs, but they fail to make good interface arrangements to existing programs. Although the emphasis on new programs may improve instruction and keep things fresh and interesting, it may also create problems. Constant change and new fads may create problems of coordination. Each new program has to interface with existing programs. A superior program that feeds into a traditional program may create enormous difficulties for students, so that students are more confused by changes of vocabulary or method, and lose the benefit of their prior gains. Reforms must also interface with schools' other organizational practices. Even if the reform improves achievement during the reform, if it teaches social skills or work habits that are not consistent with those in the rest of the school, it will harm students' ultimate performance.

Interface with tests is an important consideration. The new University of Chicago approach to math may be better for teaching two-digit multiplication, but a question on the SAT required students to know the intervening step using the old approach to multiplication, which some students never learned. Every innovation has to interface with existing practices, which comes very slowly if at all. Reforms must interface with a diversity of existing tests. They must also interface with other reforms and programs in schools.

New programs must also interface with the capabilities of teachers. The "new math" was difficult for teachers to learn and many did not (Sarason 1996). The program was devised by experts, and it may have been superior pedagogically, but it was rarely taught as intended, and did not get much support. Teachers didn't understand the textbook, and rarely got instruction. A superior program that is poorly taught and poorly or inconsistently supported may have inferior

consequences. Many instructional reforms are evaluated in terms of the practices of expert teachers, but they ignore applications where teachers do not get extensive training.

Many research questions are suggested. Are reforms built on teachers' competencies? Do reforms undermine teachers' authority? Reformers can argue that we need a whole new generation of teachers for their proposals, but at a time when we have a shortage of teachers, that is an argument for discarding the reform, not replacing the teachers. Do reforms provide ways of improving teacher understanding and provide instructional techniques to help them adapt to the new curriculum?

Reforms must also interface with parents' capabilities, or risk losing parents' assistance and support. Even when teachers got instruction in the new math, parents could not help students with it. Research rarely considers whether parents understand the reform and whether they can support and assist with it.

Reformers argue for the benefits of their procedures in isolation, as if their reform were the only factor influencing children's achievements. Yet in fact, the new reform will necessarily have to interface with teachers' capabilities, teachers' preferences and beliefs, parents' capabilities, and parents' preferences and beliefs. If teachers or parents cannot or will not support the proposed reform, the reform will not be implemented very well.

A few reforms have tried to be comprehensive and involve all parties. The Comer school reforms (Cook et al.) and the new American schools programs (Berens et al. 2002) are notable examples (although the Comer emphasis on parent input risks adding fragmentation among schools). But most reforms have focused only on the classroom, and they have ignored larger contextual and organizational factors. Such an approach runs a serious risk of encountering all of the problems noted in this essay — classroom atomism, organizational gaps in space and time, context conflicts, and incentive failures.

The Internet has been hailed as a wonderful innovation for allowing students to be exposed to a wider diversity of curricula, yet there's little consideration about whether students who lack basic academic skills, study skills, and work habits are prepared to benefit from greater diversity. While it is possible that diversity of curricula on the Internet may appeal to students' individual tastes, it is also possible that this diversity will merely create more fragmentation, which students will have difficulty using for gaining basic skills until they have developed study skills, work habits, and experience in understanding, organizing, and assessing complex sources of information (cf. Attewell, 2001).

Short-term Research Ignores Long-Term Effects

Each program —and each institution responsible — assesses achievement gains in its window of time. Such evaluations ignore whatever fall-off happens when students leave the program, re-entering the traditional school curriculum. Such evaluations strive for ever-steeper slopes of improvement in the September-June interval, but they may have no regard for changes over longer periods. Such programs may win every battle and lose the war—if there is a big fall-off after the program ends, when students re-enter regular school programs, which don't match their

ways of learning.

An organizational approach to school reform raises the question of the timetable for achievement gains. We might imagine that many short duration school reforms resemble a zig-zag chart. In the worst case, we might envision patterns like the stock market gyrations in a declining market. During the school day and during the school year, achievement may follow a series of spike up-moves, interspersed with larger declines that erase the gains after the school day ends, during the summer, and when students encounter other organizational gaps.

Parent Involvement Reforms

Parent involvement has been a major emphasis in recent years (Epstein and Sanders, 2000). However, parent involvement is not a single entity. Parent involvement can take a number of different forms, and different institutional arrangements may be used. These various arrangements may have very different implications for school organization and student learning. Various meanings of parent involvement have been proposed: (1) hiring teachers and principals, (2) deciding school policy, (3) observing and critiquing teachers, (4) helping teachers in the classroom, and (5) helping students at home. Each of these forms creates organizational relationships, and they may create new organizational procedures and institutions. While some of these forms require radical changes, others are already common in some schools. Some of these reforms may lead to learning gains, while others may not. Some reforms are said to be politically desirable, but researchers need to examine their educational effects.

In some cases, it is possible that parent political influence could have contradictory influences — improving parents' feelings of involvement, but constraining teachers and principals in ways that have undesirable effects on education. The potential negatives are rarely examined in research. When parents have a major influence on the hiring and retention of principals, principals may be more nervous about losing their jobs, and more vulnerable whenever a few parents complain. In such a circumstance, teacher incompetence will not be tolerated; however, teachers who have controversial opinions and teachers who require difficult homework assignments will also receive many complaints, and may be vulnerable. A vocal minority can be very influential, reminiscent of the book banning and anti-evolution movements that occur in some districts. With such complex issues at stake, research is especially necessary to understand the consequences of such procedures.

Some recent research has suggested that in recent decades, parents are much more likely to contest school discipline decisions in court. Moreover, judicial decisions to protect students from school discipline decisions have created ambiguities about teachers' authority and their vulnerability to litigation. There are indications that teachers have responded by being less likely to punish students, to enforce rules, and to assign difficult schoolwork (Arum, et al., 2003). Changes in governance procedures and changes in students' rights occur in institutions very far from the classroom, but it is possible that they may have profound effects on learning. Little is known about how teachers and principals react, and research is needed to examine these issues.

Research needs to be attentive to these complexities. An organizational perspective would consider specific types of parent involvement, and how each one provided resources to

parents and to school staff. In addition, research must consider ways that parent involvement may constrain the actions of teachers and principals. Sometimes these constraints will encourage effective action, and sometimes they will limit teachers' professional discretion in ways that may harm student learning. Research must consider what organizational forms of parent involvement are most effective for improving student learning, and what organizational arrangements can improve the benefits of parent involvement.

CONCLUSION

This essay has taken a single perspective and suggested many areas of research on organizational factors influencing learning. Alternative viewpoints are possible. For instance, as noted in the introduction, reducing organizational discontinuities requires what sociologists call "tight coupling," which potentially can have undesirable consequences, such as creating rigidities, unresponsiveness to reform, and preventing professional discretion at lower levels (i.e., depriving teachers of autonomy in the classroom). However, the opposite is also true. Reforming an organization which is too loosely coupled is like herding cats, where every initiative moves a few individuals in one direction while scattering all the others to follow their own preferences.

Nonetheless, research must examine undesirable consequences of excessively tight coupling. If control structures constrain teachers too narrowly, for instance with demanding exit examinations, we might expect to find fewer discontinuities among teachers, but also less originality, professional discretion, and student enjoyment. In the extreme, draconian controls might eliminate incompetent teachers, but they might also drive out the best teachers. In my opinion, American public schools are very far away from the kinds of tight coupling causing rigidities, and I believe many discontinuities could be reduced without creating rigidities. However, this is an empirical question, and research needs to attend to it.

More fundamentally, this nation is historically suspicious of centralization, especially in the domain of education. Many people worry about Washington dictating ideas to the rest of the nation. This is certainly true in the area of history, where different regions of the country have different versions of some historical events. However, this viewpoint seems to have less justification in other fields: mathematics, science, English, foreign language.

In addition, some might contend that students need to learn to cope with discontinuities, since American society is full of discontinuities. For instance, a student who experiences a geographic move and successfully copes with it will be more resilient and competent facing such moves in the future. Of course, students who fail in this experience will not get those benefits and may end up with vastly inferior outcomes than students who never experience such discontinuities.

Although all Americans must learn to cope with discontinuities eventually, students' ability to cope and learn from discontinuities may improve with age—older students may be able to adapt to discontinuities better than younger ones. Just as Piaget has noted that children under the age of 12 had difficulty coping with formal operations (abstract logical and

hypothetical thinking), students may have more success coping with discontinuities after they've attained formal operations. An individual's capacity to adapt to discontinuities may depend on attainment of basic skills or increased maturity. These are only conjectures, which deserve detailed examination. However, they suggest that research needs to consider the effects of discontinuities at different ages, and for students with different levels of mastery of basic skills, maturity, and cognitive stages. It is possible that discontinuities are extremely harmful at some ages and for some kinds of students, while being beneficial at other ages or for other students. In addition, research needs to monitor how students cope with discontinuities and whether different coping styles reduce the risks of failure.

It is also possible that certain context conditions may influence students' adaptations to discontinuities. For instance, procedures which gradually introduce the transition in small steps may make discontinuities easier to take. Strong family supports or strong peer supports may also make adaptation easier. Of course, peer supports are not always positive, and they introduce a new risk that students will become more attached to a peer group hostile to school goals.

Currently, we do not know whether and under what conditions organizational discontinuities create problems, and for which kind of students. The relative paucity of research to examine these issues prevents us from reaching conclusions on the contentions in this essay. Researchers' prior efforts to understand the causes of low achievements by studies inside the classroom are not likely to reveal the whole story. The organizational perspective suggested here raises concerns that the learning gains that we make each day inside the classroom will be eroded by surrounding organizational features.

These problems also raise concerns that we are blaming the wrong individuals, taking the wrong actions, and perhaps even making the situation worse. Policymakers often blame teachers for students' low achievement. The implicit assumption is that classrooms are where learning occurs, so low achievement must be teachers' fault and teachers must be held accountable for learning outcomes. If, as this essay has suggested, organizational factors affect student achievement, then policies making teachers accountable will not fix these organizational problems, but they will unfairly blame teachers for outcomes they cannot change, possibly creating resentment and driving out good teachers. It is of the greatest importance that we understand organizational influences on learning. Research must look beyond the classroom and understand the influence of these various organizational features.

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