

Analyzing Schools as Organizations: Long-term Permanence and Short-term Change

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In this article, principal theoretical developments in the study of schools as organizations are reviewed, particularly, neo-institutional theory and the analysis of the faculty workplace. On the basis of this review, a theoretical approach that integrates the two is proposed. In this approach, institutional constraints on schools and administrative response to them serve as prime sources of the exceptional stability of the formal organization of school districts and schools. Networks of informal faculty ties serve both to buffer and further stabilize formal structures, while situating important mechanisms through which teachers can adapt their work to inherent uncertainties in teaching and to the particularities of local circumstance. Implications of this approach for the further study of school organization are suggested, with particular reference to the study of school production.

American public elementary and secondary education underwent two profound changes during the 20th century: a massive expansion and democratization of enrollment and the elaboration of school administration into a bureaucracy of specialized offices occupied by professionally trained personnel. The expansion and democratization of enrollment can be attributed primarily to the century's steady, sharp increase in high school completion, what Trow (1961) called "the second transformation of American education." For cohorts who were born between 1896 and 1900, the high school graduation rate remained at about 30 percent for young men and 40 percent for young women. For those who were born between 1946 and 1950, this rate jumped to about 80 percent for both males and females. The rate held constant at this level through the early 1980s, but by 1992 it exceeded 90 percent

(Mare 1995). At the beginning of the 21st century, public elementary and secondary education in the United States has become a truly mass enterprise, and with the spread of community colleges, postsecondary education is moving in the same direction (National Center for Education Statistics 1995).

The bureaucratization of school administration became evident in the early decades of the 20th century with the emergence of fiduciary school boards and of school superintendents as full-time, professionally trained administrators (Reller 1935; Tyack 1974). In the ensuing years, school administration evolved into a hierarchy of specialized offices, a bureaucratic structure that by the midcentury characterized virtually all public school districts in the United States (Tyack 1974).

One might infer that the expansion and democratization of enrollment were prime stimuli to the bureaucratization of school

districts. Consistent with this inference, a more complex and differentiated organization of instruction appeared—in particular, the graded school, the specialization of teaching by grade and subject matter, and the emergence of specialized programs and schools like those for vocational or technical training or for schooling the mentally or physically handicapped (Cremin 1988; Tyack 1974). Moreover, the differentiation of offices that are responsible for overseeing instruction (e.g., assistant principals for curriculum and instruction, curriculum directors, subject matter consultants and coordinators, and assistant superintendents for curriculum and instruction) has accounted for a substantial proportion of the emerging school bureaucracy.

However, the major organizational developments in the instructional area had matured by the early years of the 20th century. Subsequent gains in both the size and composition of school enrollments were not accompanied by significant change in the organization of instruction. Although curricular and instructional innovation continued, the story of these innovations is almost entirely a story of failed implementation (Elmore and McLaughlin 1988; McDonnell and McLaughlin 1982). Instead, there has been a linear replication of age-graded and subject-specialized classrooms (Dreeben 1971). Even such specialized schools as schools for science, mathematics, or the performing arts are organizationally much like all the other schools that enroll students of a similar age, in both their instructional and administrative components.

In contrast, the bureaucratization of school administration proceeded well into the 20th century. Growing administrative complexity in the noninstructional area can be attributed plausibly to continuing increases in the scale and complexity of such school district operations as fiscal administration, health and social services for students, transportation, food services, and security. However, the bureaucratization of instructional administration cannot be explained primarily by growth in either the scale or the complexity of schools' instructional work.

The juxtaposition of profound changes in

the size, composition, and administrative complexity of schools and deep-seated stability and relative simplicity in the organization of instruction presents a twofold puzzle. How can we explain the essential stability of the formal organization of instruction, despite massive increases in the number of students to be taught and in the range and diversity of students' interests and capabilities? How can we explain the bureaucratization of school administration, especially the bureaucratization of instructional administration, in the absence of increasing complexity in the instructional core of schools?

These questions should lead us to ask also how the stability of instruction and the growth of administrative overhead in the schools have affected school production—that is, the processes by which schooling results in the cognitive development or moral socialization for which schools are formally responsible. Relatively few of the sociologists who study schools as organizations have attended explicitly to school production. In this, they are in the company of the greater number of sociologists of organizations. For the most part, the analysis of organizational production—and, indeed, of the internal activities of organizations generally—has migrated from sociology into the business schools, where it is a main topic of programs in organizational behavior (Perrow 2000). However, a prime objective of an organizational theory of schools should be to show how organizational structures and the formal specification of the work of teachers and administrators affect school production.

Students of educational organizations have followed one of two lines of analysis. One is marked by a strong interest in teachers' work—in its structural setting in the school and the consequences of the social organization of teachers' work for the school lives of both teachers and students. Inquiries by Bryk, Lee, and Holland (1993), Johnson (1990), Little (1990), Louis (1994), Siskin (1994), and Talbert and McLaughlin (1994) are recent examples of this line of research. The other line of research is marked by a lack of concern for the work of teaching, but a strong interest in the institutional linkages that bind schools into their societies and that, in the process,

give form to educational organizations. Neo-institutional theory and its specification to the school are the most recent work of this kind. The neo-institutional approach assumes that the technical work of instruction is essentially decoupled from an administrative apparatus that deals with legitimacy and resource-providing exchanges with external actors (e.g., March and Olsen 1976, Meyer and Rowan, 1977, 1978). This line of inquiry finds the primary sources of the organizational form of schools, including the form of their instructional subunits, elsewhere than in the nature of teachers' work.

LINES OF INQUIRY: TOWARD INTEGRATION

In the following pages, I argue that although neo-institutional theory provides powerful ideas about processes involved in the formal organization of schools, it yields only a partial explanation of the evident imperviousness of instructional organization to massive increases in the size and heterogeneity of enrollment. Nonrandom shocks of such magnitude should destabilize even a firmly institutionalized organization (Stinchcombe 1965). To understand how schools have adapted to these changes, it is necessary to combine an understanding of how institutionalization stabilizes organizations with an analysis of the capacity of informally organized faculties to adapt to environmental and technical change. This analysis should reveal ways in which school organization affects school production.

This approach combines a microstructural, network-based analysis of the faculty workplace in schools, a principal element of schools' internal workings, with a neo-institutional analysis of the formal organization of the school—both its administrative and instructional subunits. Taking an essentially cognitive view of the nature of activity in organizations, I argue that microstructures in the faculty workplace provide capacity for collective faculty problem solving in a locally dynamic environment, nested within a stable, institutionally grounded frame of formal

school organization. In the language of the organizational behavior literature (Brown and Duguid 1991, Cohen and Sproull 1996, Weick and Westley 1996), this microstructure provides mechanisms for organizational learning in schools, at least with respect to teaching (Leithwood and Louis 1998). I propose that the formal organization of the school, particularly the formal organization of instruction, constrains school production by constraining the structure of the informal network. In this way, the adaptive capacity provided by informal faculty organization is an unintended consequence of the stability of schools' formal organization.

I limit my discussion to public school districts and public schools, although I believe that the essential elements of the approach that I propose can be extended across the sectors of K-12 education. An overview of the sociological literature on schools as organizations sets the stage for the effort to integrate its two principal strands.

The School as a Local Institution

Waller's *The Sociology of Teaching* (1932) has come closer than any work since to the integrated approach that I advocate. Prefiguring the "old institutionalism" (e.g., Selznick 1949), with its stress on local institutional constraints on organizational form and activities, Waller combined an analysis of the school as a local community institution with an analysis of the school as a workplace for teachers. He showed that because the curriculum constrains not only what but how teachers teach, both instructional content and methods express these values. His famous depiction of the school as a "museum of virtue" and of the curriculum as a collection of desiccated subjects that are far from students' experience are particularly good examples.

Waller also showed how teachers' work generates organizational form. For him, the organizational structure of schools is an adaptation to the core regularities of institutionally grounded and constrained teaching activities. Dry subject matter, removed from the immediate lives of children and young people, forces teachers to hold students to tasks

for which they cannot be motivated effectively. Therefore, teaching is a never-ending effort to reconcile what cannot be truly reconciled—an effort to preserve standards while engaging students' interest and goodwill. Consequently, the relationship between teachers and students is essentially antagonistic, and a classroom order of domination inexorably emerges. Moreover, enforcing the regimen of virtue among both the faculty and student body means that the entire school is similarly ordered in its essential organizational form—"a despotism in a state of perilous equilibrium" (Waller 1932:10).

Studies of the Faculty Workplace

The Weberian influence in the study of organizations remained strong well into the 1950s, long after Waller found it useful to integrate the study of the workplace with the analysis of relationships between school organizations and their institutional environments. Studies in this tradition were guided by the twin premises that organizations are devised for the rational conduct of work and that their boundaries are sufficiently strong to buffer their production units from external turbulence (cf. Thompson 1967). They centered on relationships between production processes and organizational structure—the sociotechnical approach associated with Perrow (1967), Thompson (1967), and Woodward (1965)—and on relationships between administrative form and the tasks of coordinating and controlling production, associated especially with Blau (1957).

My chapter on the school in the *Handbook of Organizations* (Bidwell 1965) was strongly influenced by Waller's treatment of teaching and by sociotechnical theory.¹ I attributed departures of school organization from the classic Weberian bureaucratic model to the nature of teaching. Teaching, I argued, is intractable to organizational routines because it involves an artful balance of universalistic evaluation and particularistic motivation that requires continuing infusions from a teacher's own fund of classroom experience and, consequently, substantial classroom autonomy.

I reasoned that this pressure toward autonomy is in tension with the bureaucratic

impulse toward the rationalization of instruction. This impulse is expressed, for example, in curriculum guides and frameworks, the formal division of instructional labor, and the ultimate accountability of school officials for academic results and for the regular production of certified school graduates. Taking the pressure toward autonomy as the stronger of the two within the instructional domain, I expected the faculty workplace to be more like a collection of weakly connected classroom ateliers than like a bureaucracy. Consequently, I paid little attention to informal collegial relationships among teachers.

I did not find the juxtaposition of an administrative bureaucracy and a substantially autonomous instructional workplace puzzling. I assumed implicitly that this superstructure was the product of an essentially rational organizational design. Its motivation was partly administrative and partly political. It would arise from efforts to bring to tasks of growing scale and complexity efficient resource allocation and effective coordination and efforts to satisfy diverse parental and constituent demands by appeals to a uniform curriculum and universalistic rules of allocation and classroom management.

Although I based my treatment of teaching on Waller (1932), I ignored his attention to the institutional frame within which the work of teaching is done and the school's organization is formed. My stress on instructional autonomy drew my attention away from the administrative superstructure and its activities. My sociotechnical premises led me to ignore the possibility that the work of teaching and, partly through it, the larger organizational forms of schools can express values and beliefs held by educators, students, parents, and the public.

By the time my chapter (Bidwell 1965) appeared, organizational theorists were already envisioning a permeable organizational boundary and discovering that limitations of the human mind set limits to rational planning and decision making. The effort to open the organizational boundary defined organization-environment exchanges, rather than events within an organization's production units, as the theoretically interesting topics. As attention turned to cognitive limits to

organizational rationality, studying the vicissitudes of managerial strategies for action in the environment drew attention away from the management of production.

Loose Coupling and Neo-institutional Theory

At this point, the administrative bureaucracies of schools presented an intriguing puzzle, especially to Weick. Writing about schools as loosely coupled systems (Weick 1976) and about teaching as a cluster of procedurally underspecified activities in pursuit of vague, imprecise goals (Weick 1982), Weick seemingly disposed of the idea that the organizational form of schools expresses a rationally motivated design for administering instruction. Resonating with March and Simon's (1958) view of bounded rationality, Weick's (1976) use of the metaphor of loose coupling in effect swept away the idea that school administration has much to do with instructional operations. Given its nature, teaching could scarcely be rationalized, either as an organizational plan or as an object of more than cursory administrative supervision. To explain the administrative structure of schools and districts, one would have to look somewhere other than to teachers' work and its social organization.

In principle, Weick's ideas about loose coupling and teaching could have motivated a new analysis of the faculty workplace. In his discussion of the functions of loose coupling, Weick (1976) included positive effects on the capacity of subunits of organizations to adapt to the environment and to engage in relatively autonomous action. Within the loose coupling framework, one could ask whether and how, in relation to their formal superiors, teachers, individually and collectively, perceive and respond to actors and events in their work environments. In the decentralized American educational polity, these environments presumably would be primarily, though not entirely, local, including parents, other constituents of school districts, and local publics, and, beyond the locality, broader occupational and state and federal policy environments. Nevertheless, the loose-coupling metaphor, the evident technical weak-

ness of teaching, and the rising interest in boundary exchanges between organizations and environments combined to draw attention away from instructional structures and processes.

This line of analysis is expressed powerfully in neo-institutional theory. Partly influenced by Weick's ideas, Meyer (1977) and Meyer and Rowan (1977, 1978) depicted schools as prototypical organizations in which formal structure expresses the "myths of their institutionalized environment" (Meyer and Rowan 1977:341). By strong implication, in this analysis administrators are key actors because they design or imitate organizational forms that are adapted to this environment.

Meyer and Rowan are among the few sociologists of school organization who have addressed school production explicitly. However, they defined school production in a unique way that gives little attention to the substance of students' learning or moral socialization. For Meyer and Rowan, the key product of schools is whatever interested actors define as an indicator of school quality. Educators, students, parents, constituents, and the general public alike use the same institutionalized categories, such as credit hours earned, diplomas awarded, or degrees held by teachers, to do so. In addition, the school's own organizational form is among its products. Schools are productive and their administrators are successful when they supply successive cohorts of institutionally classified individuals and create themselves as appropriate cultural objects. Their cultural compliance is also cultural production. A school's legitimacy, of prime importance for the administrators in the central office if they are to succeed in their careers, depends on both forms of institutionalized production.

In the neo-institutional analysis, the mechanisms that structure schools are external. Although people inside these organizations make the decisions that adapt school structure, the constraints to which school structure is adapted arise from the processes of cultural change and social control that create and maintain institutionalized beliefs about what schools are like and about the meaning of categories of school attainment.

This proposition extends to the formal organization of the instructional core. For

schools, as for all kinds of organizations, the formative action that gives rise to formal structures and processes throughout the organization is essentially subordinate to an institutional order that has its own dynamics in processes of cultural change that are beyond the immediate realm of organizational action. For example, DiMaggio and Powell (1983) proposed the diffusion of occupational norms as a principal mechanism that produces structural isomorphism within organizational fields, so that change of form must then be influenced substantially by movements of thought in occupations like school administration. Consequently, neither how the organization of instruction affects school production nor how instruction affects organizational form is of central interest. Instead, the prime question is how the output of persons who are certified to have been instructed and the school's formal structural configuration affect the school's legitimacy and consequent organizational well-being.

A Return to the Faculty Workplace

Recent work on school organization has turned back to the instructional core and to relationships between the organizational form of the faculty workplace and the nature of teaching. This work draws on a broader analysis of organizations as organic systems, advanced by Burns and Stalker (1961) some 40 years ago, prefiguring the subsequent work on organizational learning. Organic system theory treats organizations or parts of organizations as social structures that are adapted to the collective solution of problems that are endemic to the organization's work. In organic organizations, offices are replaced by roles in an informal and adaptively changing division of labor, formal hierarchies by networks, authority by communication and persuasion, and domination by the emergent leadership of the currently most expert. In contrast to my earlier essay on schools as organizations (Bidwell 1965), here the informal takes precedence over the formal as a basis for organizational adaptiveness, a proposition with an honorable heritage in organizational studies (cf. Homans 1950; Roethlisberger and Dickson 1939).

More recently, Rowan (1990, 1995) applied organic system theory to the faculty workplace. In a significant way, his view of instruction differs from Weick's (1982). According to Rowan, schools' instructional goals are multiple and changing, rather than vague and imprecise, reflecting the political decentralization of American education and the complex of group interests in curricular content, instructional methods, and academic performance that are at play in schools' local political environments. Like Weick (1982), Dreeben (1996), and Herbst (1989), Rowan assumed that teachers usually work in the absence of well-specified methods and clear standards.

In sum, teachers work in an immediate environment of dynamic and complex interests and demands for performance, unsure of their technical footing. As a result, they turn to their colleagues for guidance and support, so that faculties become small, informal problem-solving social systems. Networks of colleague-to-colleague consultation and advice are the prime structural elements of these systems. These informal networks should be more differentiated with respect to problem-solving skill than the formal grade- or subject-specialized teacher roles, more responsive to daily instructional problems than the formal curriculum, and more capable of coordinating the work of colleagues than the formal administrative hierarchy.

Recent findings on the American high school are consistent with Rowan's organic system analysis. Johnson (1990), Siskin (1994), and Talbert and McLaughlin (1994) have documented the importance of departmentally based collegial ties for inducing and stabilizing pedagogical values and norms. Bidwell and Yasumoto (1999) found that teachers' instructional practices tend to converge on normatively preferred teaching objectives and methods as a function of the cohesiveness of pedagogically consensual subgroups within informal faculty networks. For the most part, though not always, these subgroups are composed primarily within subject matter departments. Bidwell and Yasumoto inferred that these faculty subgroups are social structural locations in the school workplace in which local cultures of

practice develop from teachers' collective efforts to resolve teaching problems like those that Rowan (1995) described. Yasumoto, Uekawa, and Bidwell (2001) subsequently discovered that when high school departments form normatively cohesive faculty subgroups, the effect of the subgroups' preferred instructional practices on students' growth in achievement tends to be larger, often substantially larger, than it otherwise would be.

Note that this approach to organizational structuring and behavior in the faculty workplace assumes that teachers, like administrators, act within the cognitive limits denoted by bounded rationality (March and Simon 1958). It takes as given that in an environment of substantive uncertainty, pedagogical doctrines rarely provide procedural templates of sufficient specificity to guide a teacher's day-to-day practice effectively. It proposes that to reduce the consequent uncertainty, teachers who are similarly situated in a school, such as those in the same teaching field or who specialize in an age group or ability level, pool the resources of their individual training and experience in collective problem solving. There is a collective effort to construct templates that are locally useful by interpreting the classroom problems that they encounter, fixing performance standards that square with this interpretation, and devising guides to teaching content or methods that will allow them to reach these standards.

Successful problem solving of this kind gives a group of teachers a track record of success. These are small, quotidian successes, to be sure, but nonetheless the common experience of success should result in a high level of group cohesion. As a result, the group's pedagogical templates should gain normative force, while the strength of ties in the collegial group should induce compliance. These collegial foci (Bidwell and Yasumoto 1999) should remain stable, both structurally and in the content of the templates that order the work of their members, until they encounter teaching problems that are novel and severe enough to call for new diagnoses and solutions.

That collegial foci are evidently strongly constrained to form within formal depart-

mental boundaries in high schools and, one may guess, by grade level in elementary schools is important. Commonality of teaching fields (or grade levels) is an important source of shared teaching problems and thus a stimulus to teachers' collective problem solving. However, when formal and informal group boundaries coincide, these boundaries are strengthened, which should reduce group members' access to information about pedagogical approaches and innovations in other fields, in other schools, and in the broader occupational field. Moreover, collectively perceived success in problem solving is likely to become an anchor of both group and individual identity, institutionalized within the group and highly resistant to change, even when the solution is no longer sound. Reiss (1981) documented this process in families, and it undoubtedly characterizes most informal groups that confront and resolve uncertainties that are central to their lives, including their lives at work.

Integrating the Institutional and the Informal

Assembling elements of the neo-institutional and organic systems approaches provides the basis for a more satisfying theoretical account of the sources of schools' organizational form and its consequences for school production than either approach alone affords. My argument has three main points. First, the stability of the formal organizational structure of the faculty workplace has two sources: (1) the interest of central office administrators in maintaining organizational legitimacy by maintaining a conventional organization of teachers' work (a neo-institutional proposition) and (2) the capacity of informal faculty networks to adapt both to local circumstances and to movements of pedagogical thought and thus buffer the formal organization of instruction from pressures to change (an organic systems proposition). Second, the centrality of informal faculty organization as a locus of technical (pedagogical) adaptation derives from the political weakness of school principals in school district hierarchies. Third, the analysis of school production must give a central place to the capacity for instructional

problem solving and collegial control that faculty networks provide, although the form of these networks is constrained by the formal organization of teachers' work.

Begin with the question of power. The literature on organizational learning in schools (e.g., Leithwood and Louis 1998) stresses the importance of the principal's instructional leadership in forming faculties into "communities of practice," that is, making the entire faculty collegially focal (Brown and Duguid 1991). A similar proposition has been advanced in the effective schools literature (e.g., Edmonds 1979; Mortimore 1991). However, above some fairly low threshold of size (including most high schools and many middle schools), teachers' problem-solving networks are likely to differentiate according to kinds of problems and kinds of pedagogical and subject matter knowledge and experience. When faculty networks differentiate in this way, the unifying effectiveness of formal leadership should be reduced.

More fundamentally, in the power structure of a school district, the principal's position is notably weak.² Parsons' (1956) classic analysis of organizations as political systems shows why. Parsons posited three principal strata in organizations. In order, they are general administration, which is concerned primarily with boundary exchanges with the environment (e.g., the central office); middle management, which is concerned primarily with managing production and communication between the two other strata (e.g., the principal's office); and the production subunit (e.g., the faculty workplace).

According to Parsons, actors in organizations have power resources that are distinctive of their strata. They use these resources to pursue organizational aims and to further their particular interests. Production staff can slow down or disrupt production. Middle managers have power directed downward that derives from their ability to distribute resources, punishments, and rewards among production units and staff. They also have the power of selective communication, directed both upward and downward, that comes from their unique access to information about the internal workings of the organization. Top managers have power derived from control

over the inputs that the organization requires to survive and prosper.³

From Parsons's specification of the tasks and power of top administrators, one can derive the proposition that properties of the input-supplying environment have a strong effect on the form of this stratum and on the actions of its inhabitants. It is a small inferential step to four subordinate propositions. First, the form of top-level management should be adapted to meet the expectations of significant customers, resource suppliers, and other stakeholders about what a well-managed enterprise should look and act like. Second, top-level administrators should use their power to ensure that the rest of the organization is adapted similarly. Third, middle-level managers should attempt to modify, resist, or derail such efforts (for example, in the interest of maintaining their own turf in a form suited more specifically to their own activities or in the interest of maintaining a production organization that is well adapted to the production technology). Fourth, their success in these attempts should occur in proportion to their own upwardly directed power—that is, their control of information about production that the top management needs for its own strategic purposes. Thus, I have specified top-level administrators as the chief agents through which organizations in firmly institutionalized environments become institutionally isomorphic, an agency, however, that is contingent on their power relative to that of their middle management subordinates.

Now consider the school district and its schools and the nature of the expectations of the actors in their environments. Like the neo-institutional theorists, I assume that in virtually all developed and developing societies, schools exist in firmly institutionalized environments. These environments encompass beliefs about the purposes of education, about the way in which education should be conducted, and about the organizational arrangements for its conduct. These are beliefs that are pervasive in the society, so that they are held in common by lay persons and educators and cross the major boundaries of demographic, social, and cultural division in its population and local, regional, and

political boundaries and levels. They are both basic and extremely general. In the United States, beliefs about the purposes of education are of the order of the beliefs that schools should prepare students for effective work and for occupational mobility, that teachers should be trained to teach, and that classes should be organized by subject and age.

The generality of these beliefs leaves ample room for differences that are derived from the specification of things more generally agreed on or from inequalities of access to commonly valued kinds or qualities of education. Such differences are particularly likely to occur at the boundaries of areas of institutionalized belief, where common understandings are particularly likely to be blurred. Some of these differences bear only indirectly on the faculty workplace—for example, debates over vocational education; the inclusion of evolutionary theory in science curricula (but not whether science should be taught); the place of non-Western history or literature in the high school or college curriculum (but not the desirability of teaching history or literature); or the relative amounts of time to be given to art, music, or physical education versus “core” subjects like English or mathematics.

Other disagreements create pressures that are felt directly by teachers as a result of advocacy by parents or others in a school's locality, administrative intervention, or the teachers' own attention to curricular and instructional movements and innovations. For example, elementary school teachers may find that the parents of their students want reading taught by phonics; the central office supervisors, by whole words; and university experts, by an eclectic approach. High school English teachers may find that au courant parents press for greater attention to literature and criticism, while the central office, alert to test results and accountability, wants stress placed on basic skills.

That agreement about the general character of schools and instruction occurs at the local as well as at nonlocal levels and extends across localities and regions is centrally important. It means that the same frame of institutionalized beliefs about education and schools is a part of the local environments of virtually all schools and school districts.

Within this broad national consensus, specific disagreements can sharply define conflicting interests, again at both the local and nonlocal levels. For many years, American public schools have been the objects of local-interest politics that has often exposed them to conflicting, strongly held, and effectively articulated efforts to realize interests. Interests in education that arise, in particular, from economic, ethnic, or religious politics (Katznelson and Weir 1985, Rubinson 1986) may bear directly on local schools when they are expressed by such local actors as local chapters of national umbrella organizations. In addition, when any of these interests is realized in state and federal policies that govern such matters as performance standards or students' rights, they increasingly carry incentives that matter to local school boards and administrators.

How, in this environment of multiple, often inconsistent or conflicting interests, are the three major levels of school district organization—the central office, the principal's office, and the faculty workplace—affected? From Parsons (1956), it follows that central office administrators should have a strong interest of their own—to maintain the legitimacy of the district, particularly in local eyes, and to secure resources sufficient to sustain the district's operations at an acceptable level of vitality. In other words, their interest is to satisfy the expectations of the district's major constituents and stakeholders, such as parents, employers, local civic elites, and fund-dispensing officials of state departments. When, as at present, the legitimacy of public education seems to have weakened on the national level, the central office's interest in maintaining local legitimacy and adequate resources should be especially acute.

When specific local interests are contradictory or conflicting, satisfying one is likely to block the realization of another. Thus, what central office administrators must do is ensure that the district's formal structure and activities satisfy general expectations—those that constitute the institutionalized consensus—while keeping activities that bear on specific interests as far from public view as possible. Thus, school districts and schools everywhere fit an institutionalized template that can be

copied from one place to another, and this template and popular belief interact in a mutually reinforcing process. In short, central office administrators should act exactly as neo-institutional theory predicts.

School principals also work in an environment of heterogeneous interests and interest-group action—both from lay groups and individuals who manage to penetrate the legitimacy-enhancing shield that the central office has erected and from professional groups and movements in which they are involved or of which they are aware. Principals are formally responsible for instruction. Therefore, one may expect them to respond selectively to external pressures, particularly curricular and instructional movements, and attempt to innovate in ways that are suited to the capacities of their faculties and students. If so, tension should often occur between innovator-principals and central office administrators who resist their efforts because curricular and instructional innovation invites public scrutiny of the district's classrooms.

However, that tension of this kind is not pervasive in school districts is consistent with the proposition that principals normally lack sufficient power to innovate effectively, in effect buffering teachers from intrusions from the central office and severing feedback loops between external actors and teachers. In this respect, principals' offices are a major locus of loose coupling in school districts, so that the boundary between the faculty workplace and interested external actors is highly permeable.

Principals, in fact, are likely to be the least powerful actors in a school district hierarchy. Neither the nature of teaching nor the routinization of key allocation rules in school districts endows them with power. Teachers' work, although specialized, is seldom interdependent; therefore, teaching requires little administrative coordination. Low interdependence among teachers also means that the likelihood of severe disruptions of a district's instructional work is low, so that principals do not have a great deal of either tactically or strategically useful information to give to the central office. Because teachers' salaries are based on seniority and instructional resources are usually allocated according to universalis-

tic rules, the significant incentives that principals can offer to teachers are severely limited. Consequently, principals should have less power than either a unionized teaching force or the environmentally connected cadre of central office administrators.

It follows from the foregoing argument that central office administrators, interested primarily in maintaining organizational legitimacy and attendant flows of resources, are an essentially conservative force in school districts, involved in a near-universal project to conform district and school organization and activities to institutionalized external expectations. At the same time, principals lack the power to be consistently or systematically innovative. As a result, the formal organization of school districts, from the central office down to the classroom, should express the core of institutionalized beliefs about how schools are to be structured and how their work is to be conducted, beliefs that comprise a truly national consensus.

Firmly institutionalized beliefs about the core activities of a society are slow to change, and, I have argued, there have been no significant forces to destabilize their expression in these formal structures. This neo-institutional analysis seems to explain why school districts have progressively bureaucratized the administration of instruction, even after obvious stimuli to this process had diminished, reproducing the same structural form (as does the entire formal structure of these districts) from one place to another. Criticism of public education as ineffective, rigid, or bureaucratic should reinforce, rather than weaken, this stability by causing administrators to make extra efforts to ensure the public acceptability of their organizations. Indeed, when school districts attempt to reform or revitalize their teaching programs, in response to criticism by public officials, politicians, local elites, or a more general public outcry, as has been true over the past decade in Chicago, the response is essentially conservative—for example, upgrading the qualifications of teachers, stressing "basics" in the curriculum, making summer school mandatory, raising standards for graduation, and holding local schools more strictly to performance standards already in place.⁴

This analysis is open to the challenge that the massive changes in the number and kinds of students whom the public schools enroll must have created pressures that are sufficiently strong to destabilize even entrenched ways of organizing to teach. However, faculty networks and collegial foci, which tend to emerge within the main formal structural dimensions of the faculty workplace (subject matter departments in middle and high schools and, presumably, grade levels in elementary schools), by providing capacity local instructional adaptation, also buffer the formal structure of the faculty workplace from pressures to change.

Teachers, even in the most cohesive collegial foci, do not invent teaching materials, procedures, or standards *de novo*. Mintzberg (1983) argued that organizations must design their work according to the requirements of their core technologies ("internal consistency") and environmental exigency ("external consistency"). Following Parsons, I posit that external consistency is the prime task of the central office. Faculty networks and collegial foci allow groups of teachers to achieve both internal and external consistency. That is, teachers' training, teaching experience, and participation in the profession provide general knowledge of the conceptions of instructional purposes, ways of teaching, and criteria of performance that teachers then specify to local circumstances, either individually or, more adequately, in collegial foci.

The changes in the size and composition of enrollments that occurred in public education during the past century, though cumulatively massive, were incremental and essentially linear (Mirel 1992). As a result, as these changes worked themselves out in particular, local ways, teachers could continue to adapt the broad pedagogical doctrines of their profession to local instructional exigencies without disturbing the formal organizational equilibrium.

SCHOOL PRODUCTION

If the foregoing integration of neo-institutional and organic system approaches is cogent,

then a sociological analysis of school production must take faculty networks centrally into account. It must consider the problem-solving capacities of faculty networks, the ways in which these networks sustain and enforce local norms and standards of teaching practice, and the consequences of these network-specific processes for the ways in which instruction is conducted. Hence, the sociological analysis of school production should search for the correlates of the capacity of faculty groups to diagnose the motivation and cognitive capabilities of their students and to induce and enforce locally specific procedural norms and performance standards.

The putative significance of faculty network structure for instructional problem solving and school production suggests four questions for inquiry.

What Are the Consequences of Network Form for Faculty Problem Solving?

Standard contagion theory of network processes grounds several propositions. Effective problem solving should be a positive function of network density (a consequence of efficient internal communication and effective interpersonal influence), network centrality (a consequence of the prestige and power of informal leaders who are likely to emerge on the basis of expertise), and the permeability of the network boundary (because of linkages to external information sources). It should be a negative function of the differentiation of the network into subgroups (because of interruptions and distortions of internal communication and barriers to interpersonal influence).

However, in a differentiated faculty network, subgroups may solve problems efficiently because of the density of ties within them and the emergence of subgroup leaders. Moreover, the substantive basis of the formation of subgroups (e.g., teaching fields or grades) may also be the basis for the formation of ties that link the subgroups to external sources of information. At the same time, by virtue of their substantive differentiation and relatively weak interconnections, the existence of subgroups may permit more rapid, flexible, and effective adaptations to local situations and changes than is characteristic of

undifferentiated faculty networks. This capacity, in the informal structure of the faculty workplace, parallels the adaptive capacity of formal subunits in a loosely coupled structure that Weick (1976) noted. Thus, subgroup differentiation should reinforce the positive effect of the adaptability of faculty networks on the stability of the formal, institutionalized structure of schools and districts.

What Affects the Structure of Faculty Networks? Effects on network differentiation are of particular importance because of the potentially negative consequences of the formation of subgroups for problem solving. The highly stable formal organization of instruction, as I have suggested, should constrain faculty networks and thus affect school production indirectly. Faculty size and specialization are perhaps the major factors that affect network differentiation, the former as a consequence of the probability that any pair of teachers will interact and the latter as a consequence of the existence of multiple bases for interaction within the faculty. The level of training and professional involvement of a faculty may also be important, especially as they affect the prevalence of ties to external sources of information and the tendency of subgroups to form around teaching specialties or less formal interests.

What Conditions Produce Variation in the Uncertainty That Teachers Face and Thus Stimulate Collective Problem Solving? Variation in the adequacy of resources for teaching is an obvious condition. More interesting may be variation in either the motivation or academic capabilities of students. The relationship may be curvilinear, so that either passive or incapable students or highly demanding students present the more numerous and more difficult classroom problems. Exposure to diverse pressures should be a function of the force with which state policies like those for systemic reform bear on individual school districts, in the form of sanctions for compliance or for academic performance. It also should be a function of the professionalism of the central office staff (which should affect the frequency and intensity of central office intervention in teachers'

work). Finally, it should be a function of the heterogeneity and educational level of the local population (both of which should affect the diversity and strength of interest groups with an education agenda) and of the distribution of power between lay actors (individual and collective) and the staffs of local schools and school districts.

Under What Conditions Does Informal Leadership Supplant the Principal's Formal Leadership in the Instructional Domain?

The proposition that the principal's office is politically the weakest link in the formal chain of school district command does not preclude variation in the power of the principal, relative to the central office and faculty. When does the principal emerge as an actual, as well as a formal, instructional leader? The intensity of faculty specialization, curricular complexity, and sheer faculty size should each militate against the emergence of the formal leader as an effective one. Personal traits of the principal, such as his or her amount and kind of professional training and experience, may provide the basis for collegial ties between the principal and teachers that validate the principal's formal status. When the school is embattled, as a consequence of a high level of community or central office demand or intrusion, the very powerlessness of the principal may define him or her as one with the faculty in a fighting group against the external threat of organizational or environmental adversaries.

These possibilities suggest that effective leadership by principals, though comparatively rare, may occur more often in elementary schools than in middle or high schools, more often in large districts than in small ones (where schools presumably are more available and vulnerable to the central office), and more often in communities with relatively well-educated parents (where parental intrusion is more likely to be strong and frequent and where the principals are more likely to share professional training and experience with the teachers). More generally, the relationship between informal faculty networks and the formal structure of power and authority in schools and districts deserves investigation.

IMPLICATIONS FOR IMPROVING SCHOOLS

This analysis has at least two implications for improving the quality of instruction in schools. First, it suggests that broad national movements for instructional improvement are not likely to diffuse widely, and where they do spread, they are not likely to be implemented successfully. Previous research on the diffusion and implementation of instructional innovation (e.g., Elmore and McLaughlin 1988; McDonnell and McLaughlin 1982) reached the same conclusion, emphasizing that formal organization and traits of individual district and school staff are barriers to implementation. The present approach suggests the further importance of barriers in the informal organization of the faculty workplace, particularly the tendency for collegially focal subgroups to be strongly bounded and for their local cultures of practice to resist change in the absence of strong shocks to their institutionalization and their centrality to teachers' individual occupational identities.

Second, it follows that boundary-spanning teachers, who link faculty groups to those in other schools and to broader movements of pedagogical thought, are critical to the transmission of information about innovations to these groups. It also follows that for this information to be applied successfully to local situations, these boundary spanners must either be allied with the informal leaders of these groups or must themselves have leadership roles. Intuitively, it seems likely that these fostering conditions will occur more often in schools with relatively high-status student and parent clienteles and other concomitant resources for attracting and holding professionally oriented teachers. If so, then the centrality of informal faculty organization to school production should bias the distribution of the capacity for productive responses to pedagogical movements toward those schools in which the need for improving the quality of teaching is the least acute.

NOTES

1. With the exception, notably, of

Stinchcombe's (1965) discussion of organizational stability and change, the *Handbook* chapters tend to look inward.

2. An exception to my treatment of the principal's power may be small, curricularly homogeneous schools in which the faculty and the principals share a common fund of work experience that allows the emergence of collective trust in the competence and reliability of all alike.

3. Parsons's (1965) analysis of organizations is consistent with such analyses as those by Thompson (1967) and the contingency theorists (e.g., Lawrence and Lorsch, 1967), who expected the most elaborated and powerful administrative subunits where the greatest uncertainties lay for organizational survival or health. It also forecast the main direction of resource dependence theory (Pfeffer and Salancik, 1978) and theories centered on the control of information and power in organizations (e.g., Crozier, 1964, Williamson, 1975).

4. An alternative interpretation is consonant with Stinchcombe's (1965) stress on the importance of structural inertia in organizations. It would propose that once instructional administration had been formed, in response to the growth in and diversity of enrollments, it would continue along the same bureaucratic path, expanding and differentiating as a consequence of habitual practice and administrators' propensities to expand and reinforce their organizational domains. This interpretation and the neo-institutional analysis are complementary. Institutionalization is surely a major source of structural inertia in organizations. It also removes a major source of nonrandom shocks to organizations, that is, the clash of fundamentally opposed ideologies.

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