

7 BUREAUCRATIZATION WITHOUT CENTRALIZATION: CHANGES IN THE ORGANIZATIONAL SYSTEM OF U.S. PUBLIC EDUCATION, 1940-80

John W. Meyer, W. Richard Scott, David Strang,
and Andrew L. Creighton

Public school classrooms in the United States have changed greatly over their history. So has the organizational structure that holds these classrooms together in a national system. There have been great changes in the U.S. system of schools, districts, county offices, state departments, and national bureaus. One aim of this chapter is to describe some of these organizational changes over recent decades, using available data. Many important changes can be summarized with a very traditional word—*bureaucratization*. The framework of rules, pressures, and interests that hold a given classroom in place within the national educational system has become more explicit and formalized. The classrooms are connected by organizational rules and roles, by formulas and functionaries, by lawyers and accountants. Once held in place by the pressures in *society* that make much of U.S. life seem homogeneous, the classrooms are increasingly organized by the administration of the *state*.

Beyond tracing the bureaucratization of U.S. public education, a second main task of this chapter is to examine hypotheses about why this bureaucratization occurs. One common theme of most discussions is to see bureaucratization as a consequence of the centralization of power,

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authority, and funding. Patriotic scholarship has often seen the decentralized and associational (rather than bureaucratic) character of U.S. public education as celebrating populist democracy. But accounts of the oppressive conformism and homogeneity within U.S. educational institutions raise questions about what the term *decentralization* might mean. In any event, we test below the hypothesis that the source of the bureaucratization of U.S. educational structure in recent decades reflects the expanded power of the federal government in the system.

Bureaucratization

In most countries, the rise of central educational bureaucracies precede expanded mass public education. There is a national minister, compulsory attendance principle, curriculum, teacher certification system, and centralized structures of funding long before most children are enrolled (Ramirez and Boli-Bennett 1982; Ramirez and Rubinson 1979). The United States' experience has been quite different. A full century after this country developed the largest mass public education system in the world, a central educational bureaucracy of much substantive authority has yet to emerge. As of the last few years, there is a cabinet officer, but there is no national attendance rule, or curriculum, or teacher certification rule. And federal funding makes up less than 10 percent of public educational expenditures. The central body of functionaries has expanded but with fragmented authority over special programs rather than over the main structure itself (Meyer and Scott 1983).

We can move one level down from the national center and find earlier bureaucratic expansion. Education is, constitutionally, more a creature of the fifty states, and there has been some real bureaucratization at this level, which compels pupils to attend, defines teachers, specifies some features of curricula, and provides over 40 percent of the funds. But historically, these developments at the state level postdate mass educational enrollment in the great northern and western bulk of the country. A system of mass education was already in place by the last third of the nineteenth century — the time during which most states developed rules of compulsory education, built up small state departments of education, elaborated curricula, and certified teachers.

To carry the point further, even the modern school district — a structure with a bureaucratic staff commonly controlling a number of schools in an area — postdates the creation of mass education (Tyack 1974; Kaestle and Vinovskis 1976). And so does the modern school — a large enterprise of many classrooms integrated by at least a small bureaucratic unit. Even in the cities, earlier nineteenth century schools were small neighborhood structures.

The data we are about to review provide evidence of substantial organizational development. The average U.S. high school now has a larger administrative staff than that of the average state department of education in 1890 (Tyack 1974). Yet it would be a mistake to conclude from the history of bureaucratic elaboration that the term *centralization*, with all its connotations, applies. After all, the school was built up around universalistic rather than local rules and around general institutional beliefs rather than around formal organizations. After independence, religious ideals became secular ones, and pressures for schooling were built into both national (the Northwest Ordinance) and state law. These were not bureaucratic forms—both national and local states were “states of courts and parties” (Skowronek 1982) rather than bureaucracies—but in both law and culture they embodied sweeping universalistic and national goals, not local ones (Meyer et al. 1979). In education as in other areas, it is a mistake to infer from the weakness of the nineteenth century national state as a bureaucracy to fragmentation as a purposive national society.

Dimensions of Bureaucratization

The discussion above raises the issue of different aspects of the general phenomenon called *bureaucratization*. In the literature, much of the discussion of different aspects or defining characteristics of bureaucratization—including Weber's (1946)—conceals in its typologies arguments that should be causal and explicit. For purposes of our discussion, the following distinctions should be made: (1) Most generally, bureaucracy involves *formalization* of rules and roles. Activities, rights, and obligations are removed from the web of interactions in society, located in an organization, and thus bounded off. (2) But not just any sort of formalization is involved. In most definitions, *rationalization* is another aspect of bureaucratization. That is, the formalized roles and rules must be integrated around unified sovereignty and purpose. (3) It is generally understood that bureaucratization in a domain is greater when the formalized rationalization involved extends over a wider domain; increased *scale* of units is another feature of bureaucratization. (4) Seen as the lateral extension of bureaucracy, this expansion clearly involves a measure of *homogenization* or standardization of subunits. (5) Seen as the vertical extension of integrative capability, it involves the expansion in number of *levels of authority*. We provide below evidence on changes in all these aspects of bureaucratization in U.S. education and show that there is not much question but that great changes have taken place in recent decades.

The central question concerns the causal role of centralization in the whole process. In most usages, bureaucratization implies centralization or includes it as a dimension. It is assumed that bureaucracy reflects the expansion of the scale of administrative power. Such an assumption is involved not only in colloquial talk about bureaucracy but also in Weber's original discussions, which focused on Prussian models. In these models, and this historical experience, it was difficult not to see bureaucracy and centralization as intertwined and the latter as anything else but a cause of the former.

In our analyses below, we present evidence on this main question: Does the expansion of central power in U.S. education account for the increased formalization and scale and standardization in the system? The data suggest a negative answer to this question. In a concluding section we speculate on the meaning and implications of this point.

Bureaucratization in the Current Period

The research discussion of the history of bureaucratization in U.S. education is weakened by two common mistakes. One, alluded to above, is to mistake the rules or bureaucratic structure of the system as either similar to or a cause of public educational expansion. Thus, histories focus on the educational reforms of a Horace Mann as if they *created* the schooling system. It then requires revisionists to note that these reforms may have played no role in the actual creation and expansion of the schools (Kaestle and Vinovskis 1976). So also with the state-after-state crusade for compulsory education after the Civil War: The revisionists' statistics have it that these great organizational reforms show no effects on enrollment expansion (Fishlow 1966; Solmon 1970). Similarly with the whole bureaucratization process of the turn of the century—there is no evidence of its association with expansion (Meyer et al. 1979). Not only are educational expansion and bureaucratization distinct and decoupled processes, but one can argue that some negative relationships connect them (Boli et al. 1985).

A second mistake is to assume that bureaucratization is all of a piece—that the creation of general rules, laws, or principles means enactment in organizational reality. The awareness in the modern literature on innovation that adopted policies are often not implemented (see Berman and McLaughlin 1975–78; Hargrove et al. 1981; Weatherley 1979) is often underemphasized in more historical discussions. There is much decoupling here too.

Thus the literature on the creation of the large graded school and the modern district and superintendency focuses on the late nineteenth century. So does that on the bureaucratization of the state departments of

education. And discussions of the general construction of the larger consolidated bureaucratic district and the standardized state educational system focus on the interwar period. Too much attention is directed to the period of legal and rhetorical excitement associated with a new phase of bureaucratization and too little on the longer organizational process.

Our own venture into historical description below considers post-World War II bureaucratization. We looked for organizational changes associated with the federalization of educational issues (and to a lesser extent funding) since the 1950s—such as the waves of federal reforms concerned with racial and other inequalities and with educational quality after 1957 and Sputnik and again in the late 1970s. What we found, however, looks more like the continuation of changes resulting from earlier reforms and longer trends. We found the construction of long-term bureaucratization rather than a shift in character or direction.

Data Sources

A main function of the national Office of Education since its creation in the 1860s was the reporting of data on education in the United States. This is a function now carried out by the National Center for Education Statistics, which surveys U.S. mass education every two years. NCES simply requests the states to provide summary data on basic educational matters; all the data presented in this chapter are thus state totals calculated by the states themselves. In itself, this process says much about the weakness of federal controls over education.

Although the surveys of state educational systems sometimes change in topic and method, there is enough continuity to make tentative inferences from comparisons plausible. We assembled reports from the period 1940 to the present to see what rough evidence we could get on changes in the bureaucratic shape of the national public education system during the period. Reports from 1940, 1946, 1950, 1956, 1960, 1966, 1970, 1974, and 1980 were used to approximate five-year intervals (Statistics of State School Systems 1940–80). Because statistics on Alaska and Hawaii were not collected for the first four periods, those cases are omitted throughout to increase comparability. Other omissions of data for particular states are rare and commented on in the text. On the other hand, for many of the variables, data are missing for particular years. The tables simply leave those entries blank.

Formalization and Scale

The first two rows of Table 7–1 show the changing enrollment base of the system. Because elementary enrollment was practically universal through

Table 7-1. Selected Indicators of Bureaucratization and Funding, 1940-80.^a

Name	1940	1946	1950	1956	1960	1966	1970	1974	1980
1. Enrollment	527,862	483,448	512,792	646,875	719,286	853,840	924,714	905,455	829,870
2. Percentage enrolled of 5-17 cohort	.81	.81	.80	.84	.83	.87	.90	.89	.89
3. Teachers	18,175	17,246	18,965	23,530	28,009	35,340	41,784	44,506	45,046
4. Students/teacher		27	26	27	26	25	23	21	19
5. Schools		3,841	3,179	2,714	2,438	2,065	1,877	1,831	1,794
Elementary		3,336	2,668	2,172	1,904	1,514	1,333	1,296	
Secondary		505	510	541	534	550	496	487	440
6. Students/school		142	176	254	309	402	471	469	
Elementary		130	172	257	309	406	474	470	
Secondary		229	233	277	277	429	527	579	
7. Principals	765	696	910	1,104	1,313	1,595	1,868	2,073	2,186
8. Students/principal		1,053	715	653	597	564	500	449	380
9. Principals/school		.224	.332	.452	.549	.738	.943	1.048	1.160
10. School districts	2,437	2,109	1,734	1,141	843	561	398	347	330
11. Students/district		1,619	1,831	2,557	3,041	3,914	4,613	4,661	4,423
12. Superintendents	260			284	277	284	270	267	
13. Superintendents/district	.360			.598	.579	.688	.785	.844	
14. Assistant Superintendents				88	118	180	278	478	
15. Assistant Supt.s/district				.544	.750	1.027	1.783	1.950	
16. School board members		7,405	5,850	4,646	3,551	2,621	2,115	1,987	
17. Board members/district		4,349	4,365	5,186	4,779	6,375	5,657	5,865	
18. Intermediate units (cases)				68(34)	66(31)	59(28)	55(25)	53(20)	
19. SEA staff	74	114	161	187	208	318	400	448	
20. Students/SEA staff		4,241	4,022	4,335	4,083	2,848	2,305	1,961	
21. Revenue/student		207	281	353	433	595	786	868	892
Percent federal		.6	2.7	5.79	6.40	10.13	10.13	10.42	9.30
Percent state		35.0	38.1	38.27	39.89	39.85	41.60	42.67	46.69
Percent local		64.4	59.2	55.69	53.70	50.01	48.25	46.89	43.99

a. Entries are means of state values for forty-eight states.

the period and the great bulk of it was in the public system throughout, the long enrollment increase and the more recent decline reflect demographic changes. Parallel changes affect the secondary enrollments, but to them must be added a strong secular increase in rates of secondary enrollment (and completion).

Numbers of teachers provides an alternative base figure to students, and in Table 7-1 we report mean numbers of teachers and student/teacher ratios during the period. Teacher data parallel student data but also reflect a long secular decline in the student/teacher ratio (Inkeles and Sirowy 1983). The results below are similar whether we use teacher or student data as their base, so we stay with the latter.

Our central interest is in the bureaucratization of schooling, and we turn now to address this question. The national data report the number of public schools of various types in each state. The size of schools is one indicator of bureaucratization: A system with many little schools is less organizationally developed than one with a few big ones.

Rows 5 and 6 in Table 7-1 report the mean numbers of schools and students per school, averaged across states. The latter is one crucial item for assessing bureaucratization. The curve for mean numbers of schools is graphed in Figure 7-1. The results show a striking change in mean school size during the whole modern period up to the middle 1960s. The mean school size increases from 142 to 440 pupils in the 1940 through 1980 period. An organizational change discussed in the literature as going on in the 1890s and 1920s is a main feature of the contemporary period.

These figures are divided between elementary and secondary schools in Table 7-1. This shows that the bulk of the decline in numbers of schools reflects the closing of elementary schools, while the numbers of secondary schools per state has stayed almost constant. However, the growth rates in mean numbers of pupils for elementary and secondary schools are quite comparable. Schools of either kind have expanded sharply between 1946 and 1980.

Note that these data describe state averages of the mean size of *schools* in the system. They do not describe the average experience of students. This is an important distinction: While massive public attention has been focused on other issues, the educational system has been quietly continuing to clean out the hosts of little schools (often in rural areas) that were once its main organizational feature. Thus the decline is most dramatic in the Midwest, where the educational systems are historically the most decentralized—although it is visible enough in every state.

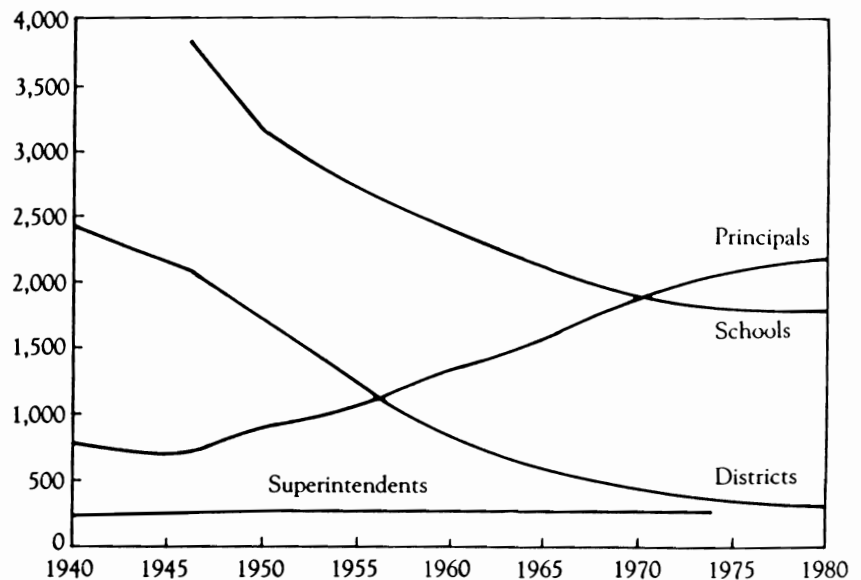
As schools become larger, they acquire other bureaucratic attributes such as specialized administrative functionaries. Our data contain state reports of numbers of school principals. In rows 7 through 9 of Table 7-1 we report state means of principals and also means of the ratios of

principals to total students and schools. Mean number of principals per state is graphed in Figure 7-1. Although in 1940 less than a quarter of the schools have principals, in 1980 there are more principals than schools in the nation. This change from a situation in which few schools had specialized administrators to a situation in which almost all do involves a big step in formalization.

Now we consider the next organizational level. Schools are organized in school districts that have controlling authority over a wide range of issues from teacher employment to building ownership and maintenance. The great changes in education from 1890 to 1930 are commonly thought to have witnessed the consolidation of schools into modern rationalized district structures.

Rows 10 and 11 of Table 7-1 show the mean number of school districts per state and the mean number of students per district. The former is plotted in Figure 7-1. This curve indicates perhaps the most dramatic organizational change in the system. The numbers of school districts declines eightfold, from around 2,400 to 300 per state. Again, the long process of bureaucratization goes on at a very high rate long after it is assumed to have been accomplished.

Figure 7-1. Mean Numbers of Schools, Districts, Principals, and Superintendents per State.



It also occurs in very different places. Table 7-2 shows four comparisons of schools per school district over the 1946 through 1980 period. The first (row 1) is comparable to those discussed so far: the mean of the school to district ratio over the forty-eight states. The second (row 2) shows the changing ratio of total schools in the nation to the total number of districts in the nation. The two trends are very different: Overall the numbers of schools per district has more than trebled, but the mean state ratio has actually declined.

Understanding this discrepancy requires a closer inspection of the patterns of change of schools and districts. The average number of schools has declined rather uniformly across the states. Districts, however, show a great deal of heterogeneity. In many eastern and southern states, there were very few districts by 1940—often the county was also the school district—and in these states the number of districts has stayed roughly constant. Thus, for these states the ratio of schools to districts declined as the average size of schools grew. Other states had very large numbers of districts in the earlier periods (Illinois had over 11,000), and here districts were consolidated at a much more rapid rate than schools. Rows 3 and 4 point to these regional differences. District consolidation, unlike the other processes described in this chapter, thus has a marked regional component. (Although schools per district is the only case where the trend reverses, most of the change rates presented here are greater when computed as national totals than as state means.)

At the school district level, the statistics give us rather detailed information on administrative structure. For instance, they report the number of school district superintendents in a state—a rather clear instance of a bureaucratic functionary. Rows 12 and 13 of Table 7-1 report, over time, the mean number of school district superintendents per state (see Figure 7-1), and also the ratio of school superintendents per district. Along with these data, Table 7-1 (rows 14 and 15) shows comparable figures for assistant superintendents—another bureaucratic role recorded in the statistics.

The results are striking: The average school district in the average state is *much* more likely to have a superintendent now than in earlier decades and is also much more likely to have assistant superintendents. The numbers of superintendents per pupil has not changed so much, but what has obviously changed is the proportion of districts that are large enough to be bureaucratized. By and large, the little districts have been eliminated and with them some of the prebureaucratic arrangements of U.S. education.

With the enlargement and bureaucratization of school districts, and the drastic decline in their number, there is a great decline in the amount of nonbureaucratic administration of the educational system. The classic

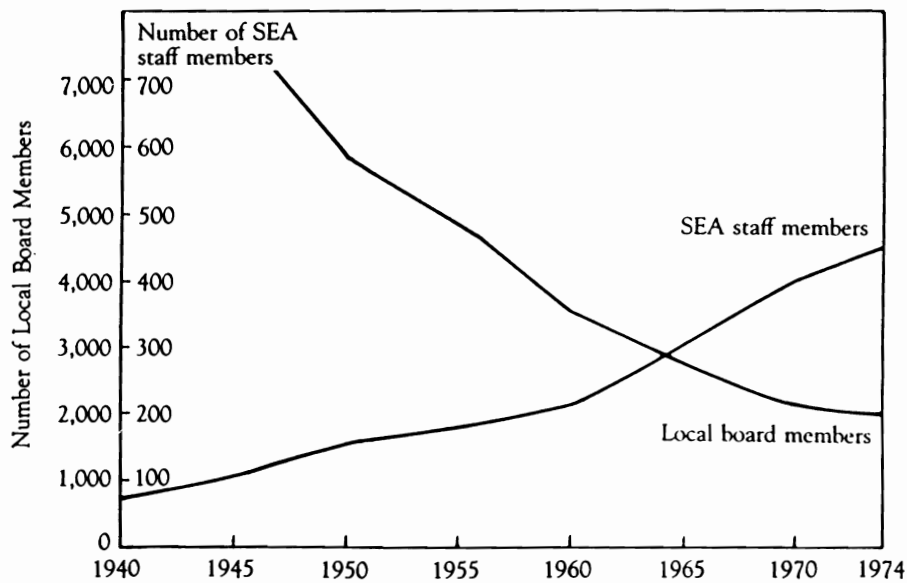
Table 7-2. Comparisons of Number of Schools per District, 1940-80, Forty-Eight States.

	1946	1950	1956	1960	1966	1970	1974	1980
Schools per district (state means)	10.65	9.76	9.21	8.78	8.47	8.34	8.63	8.83
Schools per district (national total)	1.57	1.50	1.56	2.9	3.69	4.73	5.31	5.45
Schools per district (north, central, and west)	2.24	2.26	3.18	3.48	4.36	5.13	5.63	5.92
Schools per district (east and south)	18.38	16.72	14.75	13.66	12.26	11.29	11.39	11.51

U.S. structure of this sort is the local school board made up of lay persons assuming responsibility. Row 16 in Table 7-1, and Figure 7-2, shows that the mean number of school board members per state has declined sharply, from more than 7,000 per state to less than 2,000. The next row shows that, as for superintendents per student, the number of board members per district is quite stable (in fact it increases slightly). Again, the change reflects the decline in numbers of districts. The modern cry for (and special programs to encourage) more community involvement accompanies a sharp decline in what was once the main mechanism for such involvement.

Above the organizational level of the school district, in many states, is an additional intermediate structure—most commonly, a county office of education. These offices handle a variety of special programs (such as vocational) or fundings (such as for various special handicaps) or both (such as for televised classes). The national data contain some information on the number of these units and the size of their administrative staffs.

Figure 7-2. Mean Numbers of Local Board Members and State Education Agency Staff per State.



N = 48

The mean numbers of intermediate units per state are reported in row 18 of Table 7-1, with the number of states reporting intermediate units in parentheses. The means indicate a slow decline in the numbers of these units, implying that they have either expanded or been dissolved. The important datum, however, is the decline in the number of states reporting these units, from 34 to 20. Rather than expansion at this level, a more plausible account might be that a primary function of the intermediate units—to provide services to many small districts—has become unnecessary with the creation of larger, rationalized school districts. The intermediate unit may have been squeezed by expansion at other levels.

At the top of the chain of authority in the U.S. state-controlled system, and the nearest thing to a sovereign in it, is the State Education Agency (SEA). We have data on the size of the administrative staffs of these units, both absolutely and relative to enrollment. The data are reported in rows 19 and 20 of Table 7-1 and absolute staff size is graphed in Figure 7-2. The data show a steady and large increase in bureaucratic organization of the state educational systems. The authority of these units, typically established in the last half of the nineteenth century but achieving symbolic sovereignty only in the twentieth century, has become more extensive in the modern period.

At every level, then, our data show an enhanced scale and formalization in the educational system: Schools, districts, and states are all more bureaucratically organized in educational matters. Less is left to the informal political arrangements of the community, and more is managed by a highly developed formal organizational system.

Standardization

Bureaucratization involves the expansion in scale and formalization that we have shown above. The term also implies, in most usages, the notion of standardization or homogenization in the structure of roles and organizational subunits and a reduction in overall idiosyncrasy. Our national data on the organization of schooling in the various states provides some information on the issue of the standardization of educational organization during the modern period.

The basic question is the degree of variability in educational organizational structures across states. Had we more complete data, we could consider the same question across school districts or school organizations, but our present data set is at the state level. So we consider variability across state means in a series of simple analyses below.

The standard deviation is a conventional measure of variability. However, when overall means on variables change a good deal—and it is the message of the data above that they do change and quite systematically—

standard deviations are not comparable over time. A simple example will illustrate the point. In 1940 very few school districts were big or formalized enough to have a superintendent. Percentages were small, state mean percentages were small, and standard deviations of state means around the overall mean were numerically small. By 1980 state means were much larger, and it was possible for standard deviations to be larger too—but looking at the data, it is clear that the larger 1980 standard deviations around much higher means nevertheless indicate reduced variability and more standardization among the states.

The conventional way to resolve this statistical problem is to employ the coefficient of variation as an index of variability or standardization. It consists simply of the standard deviation divided by the mean of the variable and essentially relativizes the measure of variability in terms of the scale of a variable.

Coefficients of variation for a number of our indices of bureaucratization are reported over time in Table 7-3. They show strikingly consistent increases in homogeneity among state educational systems in the modern period. The data show increased homogeneity among states in (1) the staff size of the state department of education, (2) the mean number of schools in a district, (3) the mean number of students in a school, (4) the mean number of students per school district, (5) the ratio of principals to schools, and (6) the ratio of superintendents to districts. The changes are quite consistent. Most of them are very large.

Clearly, the bureaucratization of U.S. education has involved a long-term movement, not just to greater scale and formalization but also toward a more homogeneous or standardized set of organizational structures in each of the states.

Centralization and Bureaucratization

Having established the strong trends in increased scale, formalization, and homogenization continuing in educational systems down to the present time, we move to our second concern. How are such changes to be explained? As already noted, a conventional explanation would link the growth of bureaucratization to increased centralization: the shift in power from lower to higher levels of government. Such shifts would be constituted, or at least indicated, by changes in the control of funds for public education. Certainly, contemporary images of educational change over the last two decades stress the importance of the expanding federal educational budget in producing bureaucratization. Some older analyses call attention to the centralization of funding at the state level as having the same effect. (These latter are less likely to take a negative view of either the centralization or the bureaucratization involved. They are more

Table 7-3. Coefficients of Variation, Educational Structure, Forty-Eight States
(Standard Deviation/Mean of State Values).

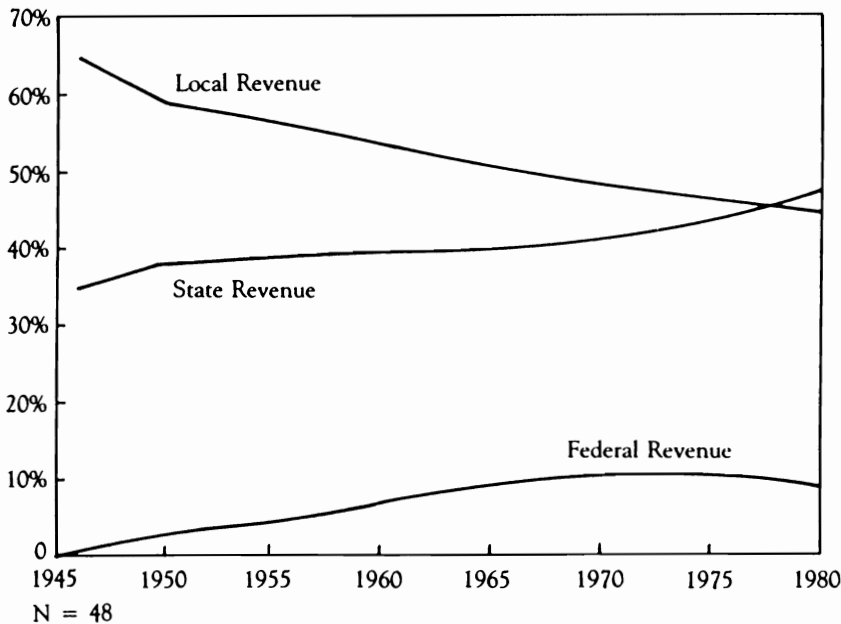
	1940	1946	1950	1956	1960	1966	1970	1974	1980
State education agency staffs	1.43	1.44	1.54	1.28	1.23	1.03	.92	.80	
Schools/school districts		1.50	1.56	1.35	1.28	1.15	1.07	1.03	1.03
Students/school districts		1.54	1.52	1.46	1.45	1.42	1.37	1.33	1.26
Students/school		.58	.54	.50	.46	.37	.35	.32	.30
Principals/school		.76	.64	.54	.48	.39	.30	.30	.30
Superintendents/district	1.05			.83	.59	.41	.36	.29	

likely to emphasize the process as involving efficiency, professionalism, and more recently equity).

The data contain state reports of public school funding from local, intermediate, state, and federal sources. We report changes over time in state means in Table 7-1, row 21. The figures are graphed in Figure 7-3. First, we report mean state educational revenues per pupil in constant 1967 dollars. The means rise throughout the period. It is important to understand that in important ways the expenditure expansion involved *itself* indicates bureaucratization: the shift from amateur to professionally credentialed and paid teachers, administrators, and staff personnel; and the shift from local unpaid school board management to modern formalized structures all the way up to the state and federal levels.

Beyond this basic change in the nature of the educational system, the data show substantial changes over time in the locus of schooling revenue. The proportions of federal and state revenues to total revenue both rise by about 10 percent, the federal from practically nothing to 10 percent, the state from 35 to 46 percent. The big change, then, is in local revenue, which declines from 64 to 43 percent (being finally topped by state revenue only in the late 1970s).

Figure 7-3. Mean Percentages of Total Education Revenue from Federal, State, and Local Revenue per State.



A caveat: The ultimate sources of revenue are not always the best guide to who controls the money. An original federal expenditure may be distributed by the state and come to be counted as, or have the organizational meaning of, state money. This may be an accounting problem, but it has substantive importance. The great increase in educational expenditures by higher levels of government in recent decades has in part gone to reinforce the power of the units already authorized to manage U.S. education—school districts operating under state authority. Just as, on other levels of analysis, the modern expansion in worldwide economic power has reinforced the authority of the nation-state, or the earlier construction of national stratification systems reinforced the logic of individual citizenship, so the nationalization of U.S. education may be occurring through the funding and authorization of the expansion of state and local bureaucracy. It is a point to which we will return.

Causal Models of Bureaucratization

We turn now to examine data on the central hypothesis that flows from the discussion above. Several lines of empirical work on districts within particular states suggest that more centralized funding is associated with the expansion of bureaucratic administration (Freeman, Hannan, and Hannaway 1978; Bankston 1982). We have established that both trends occur over time—there is an increase in state and federal financial control, and there is more bureaucratization. Are these trends related? With enough data, one could address such questions with national-level time series data and analyses. But limitations of data and problems of analytic specification restrict the value of such an approach. In the analyses below, we take advantage of the variability among U.S. states and focus on examining how variations in their funding of public education affect the degree of bureaucratization of each state educational system.

Our analyses are a series of cross-sectional and longitudinal multiple regressions. As dependent variables we employ a number of indicators of bureaucratization at various levels of the educational system. We use the staff size of the SEAs, the number of school districts in the state, the number of schools, the amount of administrative expenditures, the number of assistant superintendents, and a measure of the number of district administrators in the state. Following the above discussion, the three explanatory variables of substantive interest are the amounts of federal, state, and local revenue in the state. We also include the number of school districts as an explanatory variable where appropriate because we believe bureaucratization at the district level may increase bureaucratization in schools or administrative structure. Enrollment is used as a control variable for state system size.

We proceed in two steps. First, we consider cross-sectional analyses for 1970, 1974, and 1980: Do states with centralized funding have more bureaucratic educational systems? Then we shift to panel analyses over the same period: Do states with more centralized funding shift over time toward more bureaucratic structures? In a concluding section we discuss possible interpretations of the argument and findings.

Model Estimation

The form of the regression equations that we estimate is driven by an artifactual multicollinearity in the data. The units of analysis are U.S. states, which differ greatly in their size and population. Because each variable is a count of local units or activities, there are bound to be large positive correlations between most variables. Big states have more local revenue, more state revenue, more schools, and more school districts than small states. For example, the correlations between the three revenue variables are all greater than .6, high enough to markedly increase the variance of the coefficients. We are thus more likely to reject true hypotheses about the effects of our variables.

Our strategy in dealing with this multicollinearity is to standardize the variables. Enrollment is our best indicator of the size of the state educational system: We divide every term in the equations by the number of pupils in the state to cancel the scale differences among states. (Except in the SEA regressions, where we use the natural logarithm of enrollment as a control variable). Although the regressions can then be seen in a generalized least-squares framework, we prefer to think of the variables divided by enrollment as having substantive meaning. We can thus speak naturally of the effect of federal revenues per pupil on the numbers of schools per pupil. Dividing the equations by enrollment thus plays a double function; it lessens the problem of multicollinearity and provides a consistent basis for talking about all effects in "per pupil" terms.

A few words about the coefficients will make the tables easier to read. Both the sources of revenue and enrollments are measured in thousands. The coefficient for federal dollars on schools, for example, thus gives the impact of an extra dollar of federal funds per pupil on the number of schools per 1,000 pupils. Because enrollment appears as a reciprocal, a positive effect means that higher enrollments in the state lead to decreases in the dependent variable. Finally, the financial variables are not measured in constant dollars, so comparisons across years must hold constant the changing value of the dollar. This is important in the regressions on administrative expenditures, where increases in the coefficients of the nonfiscal variables reflect inflation.

As in the descriptive statistics, Alaska and Hawaii have been omitted from the analyses. Hawaii has only one school district, making it impossible to calculate separate figures for state and local revenues. Alaska is also a special case because of its very low density of population; it is such an extreme outlier in all the equations that we thought it advisable to omit it entirely.

Cross-Sectional Analyses

Size of the State Department of Education

We begin with analyses of the size of the bureaucracies at the top of the state system—the SEA. We have seen that these have increased greatly in size (see also Murphey 1981). Our question now is whether they are larger when state and federal funding is high and local funding is low.

Table 7-4 presents relevant cross-sectional analyses. The dependent variable is the natural logarithm (taken because of the distribution of the variable) of the number of employers in the SEA. We hold constant the natural logarithm of public enrollments in the state—states with more students tend to have much larger departments of education. Then we include federal, state, and local educational funds per pupil. Finally, we include a dummy variable for southern states, which have a history of central activity in fields like education. The analyses are reported with data from 1970, 1974, and 1980.

The data show that SEAs are larger in southern states and especially in more populous states. But we do not find consistent evidence that more central federal and state funding increases the size of the bureaucratic center. In two of the three analyses, local funding shows, in fact, a positive effect. And the federal effect is significantly positive only in the 1980 analysis.

Districts and Schools

Two other indicators of bureaucratization discussed above are the average size of school districts and schools in a state. Our hypothesis is that more central funding increases the average size of these organizational units.

Table 7-4, row 2, shows the results for the number of school districts in a state, standardized by enrollment size. There turn out to be more school districts per student when a state has low enrollments, reflecting rural conditions. (As mentioned above, the positive coefficients for the reciprocal of enrollment mean that the number of districts decrease as enrollments increase). For our hypothesis of interest, the results are suggestive. Local funding shows the expected positive effect on the

Table 7-4. Cross-Sectional Regressions: Effects of Funding Source on Selected Bureaucratic Structures, for 1970, 1974, and 1980: Forty-Eight States.

Dependent Variable	Year	Independent Variables					
		Constant	Log Enrollment	Federal Education Revenue per Student	State Education Revenue per Student	Local Education Revenue per Student	South (Coded 1)
1. Log State Education Agency staff	1970	1.36 ^a	.52 ^a	-.002	.001 ^a	.001 ^a	.69 ^a
	1974	1.02 ^a	.60 ^a	.001	.0004	.0006 ^a	.53 ^a
	1980	1.37 ^a	.51 ^a	.002 ^a	-.0002	-.00001	.02
2. Districts per student	1970	.80	196 ^a	.0009	-.003 ^a	.001	
	1974	-.45	119 ^a	.006	-.001 ^a	.001 ^a	
	1980	.33	127 ^a	.0008	-.0005	.0002	
3. Schools per student	1970	1.97 ^a	105 ^a	.004	-.002 ^a	-.00005	.84 ^a
	1974	2.32 ^a	126 ^a	.001	-.001 ^a	-.0003	.83 ^a
	1980	1.60 ^a	100 ^a	.001	-.0002	.0001	.92 ^a
4. Administrative expenditures per student	1970	-.004	332	.03	.04 ^a	.04 ^a	2.67 ^a
	1974	.003	697	.03	.02 ^a	.03 ^a	3.69
	1980	.01	1072	.12	-.006	.04 ^a	6.07
5. Assistant superintendents per student	1970	-.0004	4.6	.002	.0009 ^a	.0005 ^a	-.005
	1974	-.0003	18.89	.0004	.0008	.0005	.007
Total district staff per student	1980	.001	38	.002	.0003	.0006	2.35 ^a

a. p ≤ .05

number of school districts, although it is significant in only one of the years. State funding shows the expected negative effect, and it is significant in two of the three years. Federal funding shows neither a consistent nor a significant effect.

Table 7-4, row 3, shows parallel analyses of school size. In this case, we add district size as an additional independent variable because larger and more bureaucratic districts might be expected to generate more consolidated and bureaucratic schools. The results conform to those above. Low state enrollments reduce average school size. And states with fewer (and thus bigger) districts have fewer and bigger schools. Once again, the effects of state revenue are in the hypothesized direction and significant in 1970 and 1974. In this case, however, local and federal funding are generally in the wrong direction and never significant.

Administrative Expansion

We can also analyze data on the expenditures on administration reported for the states—these expenditures occur mainly on the local level. Table 7-4, row 4, shows the relevant analyses. Two findings of interest occur. First, higher levels of revenues of all kinds are associated with more reported administrative expenditures. But there is no evidence that this relationship is stronger for the more central funding sources.

Second, we observe greater administrative expenditures associated with many small school districts in contrast to fewer large ones, although the effect is significant in only one of the equations. This is an important finding. The appearance of bureaucracy is associated with fewer and larger organizations. This finding may be accurate, but bureaucracy may also be associated with reduced administrative expense.

The general conclusion is strengthened by Table 7-4, row 5, which reports similar analyses of district administrative personnel—numbers of assistant superintendents—per state. Again we find the result that higher levels of funding of any sort tend to be associated with more administrative personnel, but our hypothesis that this would be especially true of federal or state funding is not confirmed. The effect of many small school districts expanding administrative personnel is not great until the 1980 analyses, at which point it becomes massive. The explanation for this is revealing. Our 1980 data on administrative personnel comes from a different source than the others—they are not national statistical reports, but the reports of Market Data Retrieval, a private survey firm that collects with impressive skill and much experience the names and addresses of school and district officials around the country (Market Data Retrieval 1980). These data report any person having a given function as an administrator, unlike the NCES data, which report in full-time

equivalents. The differences lie in the huge numbers of part-time or unpaid or multifunction administrative personnel in small districts around the country.

The administrative cost and personnel data in rows 4 and 5 of Table 7-4—especially this last finding of the effect of small districts on administrative personnel—are suggestive of the major social changes involved in bureaucratization. Explicit administrative positions replace the multifunction teachers characteristic of an earlier and highly decentralized system. Visible administration is expanding, but in fact the economies of scale involved may mean the actual amount of administrative work is declining.

Longitudinal Analyses

In order to test more convincingly the causal orderings implied in our cross-sectional models, we can repeat them using our longitudinal panel data on the states. This involves (1) using the same basic analytic structures but examining dependent variables in 1980 as affected by independent variables in 1970 and (2) using the lagged dependent variable as a crucial control. The research question then becomes whether independent variables create *changes* in the dependent variable.

Table 7-5 repeats the cross-sectional analyses reported earlier with panel data from 1970 to 1980. In two cases in which our 1980 data are not comparable to the earlier ones, we use 1966 through 1974 panel data as a substitute. We examine in sequence changes in (1) the staff size of the state department of education, (2) the numbers of districts (per student enrollment), (3) schools/enrollments, (4) administrative expenditures, and (5) administrative personnel. As before, (2) through (5) are standardized by enrollment (of the base year). In each case, the main hypothesis continues to be that central sources of funds produce bureaucratization.

This hypothesis fails. Overall the analyses show no special inclination for states with higher levels of state or federal funding to become more bureaucratized over our period. The effects of state centralization on numbers of schools and school districts, which were supported in the cross-sectional analyses, do not appear longitudinally. And as in the cross-sections, federal and local funds do not seem to influence any of the indicators of bureaucratization.

Rethinking the Relation between Bureaucratization and Centralization

We have seen a strong trend toward expanded formalization and scale in U.S. public education, with schools, districts, and state organizations that

Table 7-5. Panel Regressions: Effects of Funding Sources on Selected Bureaucratic Structures, 1966-74 and 1970-80: Forty-Eight States.

Dependent Variable	Year	Independent Variables						
		Constant	Log State Education Agency Staff 1966	Log Enrollment 1966	Federal Education Revenue per Enrollment 1966	State Education Revenue per Enrollment 1966	Local Education Revenue per Enrollment 1966	South (Coded 1)
1. Log State Education Agency staff	1974	-.40	.32	.35 ^a	-.007	.001	.001	.30 ^a
2. Districts per enrollment	1980	.42	.55 ^a	15.9 ^a	-.003	-.00005	-.0001	
3. Schools per enrollment	1980	.69	.73 ^a	7.24	-.0006	-.0001	.00005	.08
4. Administrative expenditures per enrollment	1980	80 ^a	1.85 ^a	2574	-.29	-.06	-.07	4.16
5. Assistant superintendents per enrollment	1974	-.18	-.16	29	-.001	.001 ^a	.001	-.01

a. $p \leq .05$

are expanded in size and differentiated administratively. Clearly, a particular classroom and school is more *organizationally* connected to other classrooms and schools now than in the past. Funding is also more structured through state and federal governments now than in the past. There are several ways to think about this, the most common of which is to see it as the centralization of power and authority.

In the analyses described above, we examined this line of reasoning. If shifts upward in funding indicate centralization of control, they might be followed by the expansion of educational bureaucracy seen as a centralized system. Such a conception of bureaucratization as an imperative control system fits comfortably with conventional organization theory and its Weberian roots.

But we find less evidence than expected to support the idea of a close linkage between a shift toward state or federal funding and bureaucratic expansion. The chain of reasoning from funding changes (seen as centralization) to bureaucratic expansion as its expression is clearly weak. In fact, it is useful to rethink the whole structure of this causal argument.

Consider the several meanings of the term *centralization*. In some usages, it becomes almost coterminous with *bureaucratization*, reflecting the widening scale or standardization of a given set of rules. Centralization, in this sense, is the opposite of localism. In this kind of language, any sort of integration in a given social domain signifies centralization and domination. Obviously, thinking along these lines conceals a particular theory of history as driven by exploitation and control interests. It would be better to make the theory explicit, rather than to bury it in definitions.

If we try to formulate a definition of *centralization* that is distinct from what we have called *bureaucratization*, notions of power and domination must be involved. There must, in brief, be a center. Whether or not this center's power is legitimated, centralization involves the ideas of (1) some sort of distinct set of central purposes (2) set against or separate from the rest of society and (3) dominating it. The first two elements are the crucial ones, and in modern terms distinguish between state-formation and nationbuilding, so that only the former entails *organizational* centralization (Bendix 1969). We thus exclude from a reasonable definition of centralization processes — no matter how coercive — by which standardizing rules evolve in the *larger society* that bring individual subunits into conformity. (Such processes have been seen as central to U.S. homogeneity since de Tocqueville (1947 [1835]). They have also been seen as the antithesis of organizational centralization.)

There has indeed been a funding shift toward state and (to a lesser extent) federal revenue. And there are clearly shifts away from organizational localism and toward bureaucracy. Do these shifts constitute centralization? We consider the centralization of funding different from the

centralization of substantive authority. The latter would involve the endowment of the state center with some right of power and purpose against society: the right to mobilize collective resources around the center's chosen collective goods. Increased centralization of educational funding in the 1960s, 1970s, and 1980s in the United States does not seem to have empowered the agents at the center. At the federal level, there is the ostentatious denial of any distinct federal purpose. There is only the assumption of responsibility for other prior goals of a highly decentralized kind: in the 1950s, areas impacted by federal activity; in the 1960s, minorities and the poor; in the 1970s, the handicapped. In all U.S. educational history, one finds only a shadowy reflection of the *organized nation-state's* autonomous purposes—a few military schools, an eviscerated vocational educational system, and the National Defense Education Act—as opposed to those seen as vested in society as a whole. The implication here is that one should not expect to find the expansion of federal educational funds, which are not allocated toward the reconstruction of education around nation-state aims, to produce bureaucratic centralization. In fact, in our earlier work (Scott and Meyer 1987) we had seen this “fragmented” character of the federal involvement in education as possibly generating laterally extended bureaucracy *because* it could not generate centralization. We will have occasion below to reconsider even this argument. At present, we simply note that the nature of federal involvement is not to be seen as centralist, given the absence either of legitimate sovereignty over education or distinctive purposes for it.

In the U.S. system, states do have sovereignty over education, and it makes a bit more sense to imagine that the expansion of their funding might lead to centralizing bureaucratization (see Doyle and Finn 1984). On the other hand, consider here the few distinct collective purposes or missions a U.S. state can have for its public educational system. Can Indiana mobilize its educational system, following the Prussian example, to help wage war—even Kulturkampf—against Illinois? The states play a role akin to that of service organizations as much as dynamic leaders and carry out a mission defined on a wider scale than their boundaries. They attempt, in funding, to equalize resources among communities, classes, and ethnic groups, following norms set by national courts and ideology or to upgrade education along nationally standard lines. One can see an impulse to bureaucratize standardization here but not to centralization around autonomous purposes.

Once we get rid of the image of a central *power* using its funds to drive bureaucratization as a means of enforcing its will, we have also given up one rationale for seeing the whole process as causally driven by changed funding patterns. We have seen a great change in organizational scale in education—funding changes are part of it but not the crucial causal link.

Bureaucratization as Expanded Scale of Administration

Suppose we drop the fashionable social scientific language of power to talk about the process we observe and avoid the demonic image of increasingly centralized authorities using resources to dominate U.S. education. We are then left with the more traditional language of U.S. organizational thought, which talks about organization rather than bureaucracy and coordination rather than power. Perhaps such themes capture the reality of expanded scale that we observe better than do ideas that trace these developments to central nodes of power.

Once we see the changes as reflecting standardization, different causal imagery seems reasonable. Instead of thinking of the changes as reflecting nation-state power, other aspects of nation-building seem more important. That is, society itself—not primarily the state—is being reconstructed along increasingly rationalized lines and on an enlarged scale. And the forces legitimately empowered by the changes, as well as those advocating them, arise in society more than in the state organization. Thus a whole series of changes in U.S. education reflect and emphasize standardization around highly professionalized models. They partly reflect, and most certainly enhance, the authority of the educational profession as part of national society. Similarly, there have been all sorts of pressures toward the involvement and equality of many different groups in national society, from classes to ethnic groups to regions and communities. There have been many different pressures toward general improvement (meaning, in part, conformity with standard national models) and the elimination of diversity and communal authority (backwardness) in various hinterlands. There have been many pressures for expanding educational services demanding larger scale of funding and control (such as vocational specializations, instruction in new subjects and for new groups, services in counseling and health). And there have been continuous pressures for the upgrading of the basic profession involved—teaching—that have led to more emphasis being placed on general certification controls.

We may note some of the specific forces involved in this expansion of collective nationwide control. It is noteworthy how few of them operate only or especially through central nation-state authority, how many of them tend to lead to expansions in scale of organization, and for how many of them changed funding patterns are consequences more than causes. (1) There are all sorts of forces generating and expanding nationally standardized notions of educational quality: professional educators, intellectuals, parent and community groups, occasional national leaders, competitive pressures. (2) There have been many forces pursuing more standardizing notions of equality and operating organizationally at every level of the system: constituent and professional supports for equality for the poor, minorities, the handicapped, females, and so on. (3) Many

different forces strengthen the social standardization of the basic units of the whole educational system—the definition of the properly credentialed teacher and of the appropriate classroom and curriculum. The increasingly standardized notion of education, in this sense, makes expanded scale more sensible. If education is a social contract between individuals as teachers and other individuals as parents and members of the community, local bargaining may be necessary. With the increasing social prefabrication of both teacher and community, it becomes easier to organize on a larger scale. And all these changes make large-scale organization necessary. Failure to expand, and retaining too many localistic or particularistic roots, begins to look like backwardness or even corruption. And failure to standardize looks like inequality.

Thus, we see the expanded scale, formalization, and homogeneity of U.S. educational organization as reflecting the expansion of general national standards of education and the imposition of these on the particular subunit communities. In every area, general norms about education have expanded and become unified and national. Bureaucracies arise incorporating and reflecting them and maintaining their status in local jurisdictions. What we do not see is the emergence of a dominating organizational center in the system, from which the other changes flow and by which they are integrated and regulated. There is much bureaucratization, but it is dispersed in the several states and their component districts.

In fact, we can usefully see the modern period, and the rise of a more intensely national educational system, as organizationally enhancing the authority of the states and districts rather than any more national organizational center. National interests and concerns create national social movements, often built into piecemeal federal legislation and fragmented funding programs. But the units that derive power from this process are the states and local districts. In the absence of an authoritative nation-state center, U.S. nation-building—as throughout its history—expands the scale of intermediate units. In this case of a public good, it is the public sector that expands.

Consider the programs resulting from the recent concerns about educational quality, for example. There is much national discussion, a bit of legislative activity, a few national commissions, and a little money. But this has fueled a huge industry at the state and district level, as these more sovereign units employ the general concerns to expand their own domination over the local scene. *They* are the units, acting on the national concerns, that embody the ethic of standardization: They control testing and degree granting, curricula, and teacher quality. Expanded controls unthinkable (as undemocratic) a few decades ago have been advocated by literally hundreds of state commissions and implemented in legislation.

Here is where the bureaucracy is located. Like many other instances of bureaucratization, it draws its agenda from wider concerns but not those of a unified organizational sovereign.

Thus, we argue, the increase in national concern and debate about education in this country has ended up expanding even further the organizational power of the units with organizational sovereignty—the state and district organizational structures. Their expanded authority could be seen as a form of centralization, perhaps, but because they seem to follow rather than to generate the educational agenda, it is hard to see their authority as power. It seems unlikely that the expanded state and district organizations will function as autonomous decisionmaking bodies, capable of going off in their own directions. Rather, they will probably (following the old pattern) be the agents at the disposal of a national culture, serving to bring each subunit into conformity with it.

Overall, then, there has certainly been centralization in the sense of the destruction of local and communal and particularistic control in U.S. education and its replacement by bureaucratic organization in districts and states (and the enlarged schools, too). We find a shift from the informal and political management of schooling to the bureaucratic form. From the local point of view, this is centralization. But at the other end of the scale, we do not find the emergence of a unified organizational center. There is rather the classic pattern of a profusion of professional standards, court decisions, special-purpose legislative interests, and a huge network of interest groups. It is the traditional liberal society, redrawn on a larger and more national scale. The local teachers no longer confront the local school board in quite the same way—both groups are now components of a much wider system of organized relationships, and teacher organizations make demands of taxpayers at district and state and national levels rather than local ones. Similarly, a whole network of organized interests affects the curriculum in much the same way as the past—but it is all done at a higher organizational level. We expect to find states much more involved in the curriculum in the future, reflecting these shifts—but we also expect to find the decisions made through the classic bargaining processes rather than by a single bureaucratic center.

From an organizational point of view, the educational map of U.S. society has been redrawn in a much larger scale but has retained something of its earlier form. The organizational changes occur at the bottom, where there is much more bureaucracy reflecting the national discourse about educational matters. This bureaucracy is a standardizing holding company for institutional rules and preferences built up externally. But these institutional rules continue to reflect the associational structure of liberal society—although now at the national level—rather than the organizationally integrated purposes of an emergent bureaucratic state center.

Conclusions

We find much evidence that recent decades have seen a rapid expansion of bureaucracy—formalization, expansion in scale, and standardization—in U.S. educational organization. The changes are national and nationwide and clearly reflect the expanded dominance of a national educational culture.

It is difficult, however, to see the process as driven by the rise of a dominating organizational center in the system and as thus reflecting a move toward centralization in this sense. Direct national funding is too small, and in our data too poorly correlated with organizational expansion at lower levels, to be a plausible candidate for an important causal role.

The modern changes, like earlier instances of U.S. bureaucratization (in education and elsewhere), reflect the expansion and imposition of standard models but not those of a central national organizational structure. It seems more reasonable to see the expanded national concern for (and even investment in) education as leading to a further expansion of the organizational units already endowed with sovereignty in the federal system. It would not be the first time in U.S. history where expanded national integration and coherence generated not an expanded and dominating center but empowered and homogeneous organizational subunits.

All these subunits reflect a complex institutional system that is made up of increasingly national elements (interest groups, professions, a correction system, court and administration rule, and so on). As education becomes a national business, local and state bureaucracy grows. It reflects a growing national institutional structure but not one controlled by the central bureaucratic state.

REFERENCES

- Bankston, M. 1982. "Organizational Reporting in a School District: State and Federal Programs." Project Report No. 82-A10. Stanford, Calif.: Institute for Research on Educational Finance and Governance.
- Bendix, R. 1969. *Nation-Building and Citizenship*. Garden City, N.Y.: Doubleday.
- Berman, P., and M.W. McLaughlin. 1975-78. *Federal Programs Supporting Educational Change*, vols. 1-8. Santa Monica, Calif.: Rand.
- Boli, J., F. Ramirez, and J. Meyer. 1985. "Explaining the Origins and Expansion of Mass Education." *Comparative Education Review* 29:145-70.
- Doyle, D.P., and C.E. Finn, Jr. 1984. "American Schools and the Future of Local Control." *The Public Interest* 77:77-95.
- Fishlow, A. 1966. "Levels of Nineteenth Century Investment in Education: Human Capital Formation or Structural Reinforcement?" *Journal of Economic History* 26 (Dec.):418-36.
- Freeman, J.H., and M.T. Hannan. 1975. "Growth and Decline Processes in Organizations." *American Sociological Review* 40:213-28.

- Freeman, J., M.T. Hannan, and J. Hannaway. 1978. *The Dynamics of School District Administrative Intensity*. Cambridge, Mass.: Abt.
- Hargrove, E., G. Scarlett, L.E. Ward, V. Abernethy, J. Cunningham, and W.K. Vaughn. 1981. "School Systems and Regulatory Mandates: A Case Study of the Implementation of the Education for All Handicapped Children Act." In *Organizational Behavior in Schools and School Districts*, edited by S.B. Bacharach, pp. 97-123. New York: Praeger.
- Inkeles, A., and L. Sirowy. 1983. "Convergent and Divergent Trends in National Educational Systems." *Social Forces* 62:303-33.
- Kaestle, C., and M. Vinovskis. 1976. *Education and Social Change: Nineteenth Century Massachusetts: Quantitative Studies*. Final Research Report, Project No. 3-0825. Washington, D.C.: National Institute of Education.
- "Market Data Retrieval." 1980. Unpublished tabulations of educational personnel by state. Westport, Conn.
- McDonnell, L.M., and M.W. McLaughlin. 1982. *Education Policy and the Role of the States*. Santa Monica, Calif.: Rand.
- Meyer, J.W., and W.R. Scott. 1983. *Organizational Environments: Ritual and Rationality*. Beverly Hills, Calif.: Sage.
- Meyer, J.W., D. Tyack, J. Nagel, A. Gordon. 1979. "Public Education as Nation-Building in America." *American Journal of Sociology* 85:591-613.
- Murphy, J.T. 1981. "The Paradox of State Government Reform." *The Public Interest* 64: 124-39.
- Ramirez, F.O., and J. Boli-Bennett. 1982. "Global Patterns of Educational Institutionalization." In *Comparative Education*, edited by P.G. Altbach, R.F. Armove and G.P. Kelley, pp. 15-36. New York: Macmillan.
- Ramirez, F.O., and R. Rubinson. 1979. "Creating Members: The Political Incorporation and Expansion of Public Education." In *National Development and the World System*, edited by J.W. Meyer and M.T. Hannan, pp. 72-84. Chicago: University of Chicago Press.
- Scott, W.R., and J.W. Meyer. 1987. "Environmental Linkages and Organizational Complexity: Public and Private Schools." In *Comparing Public and Private Schools*, edited by H.M. Levin and T. James, vol. 1, pp. 128-60. Sussex: Falmer.
- Skowronek, S. 1982. *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920*. New York: Cambridge University Press.
- Solmon, L. 1970. "Estimates of the Costs of Schooling in 1800 and 1890." *Explorations in Economic History* 7, suppl. (Summer):531-81.
- Statistics of State School Systems*. 1938-40, 1940-42, 1944-46, 1948-50, 1954-56, 1959-60, 1965-66, 1969-70, 1973-74, 1979-80. From 1940 to 1956 published in the *Biennial Survey of Education in the United States*.
- Tocqueville, A. de. 1947 (1835). *Democracy in America*. New York: Oxford University Press.
- Tyack, D.B. 1974. *The One Best System: A History of American Urban Education*. Cambridge, Mass.: Harvard University Press.
- Weatherley, R.A. 1979. *Reforming Special Education: Policy Implementation from State Level to Street Level*. Cambridge, Mass.: MIT Press.
- Weber, M. 1946. *From Max Weber: Essays in Sociology*, edited by H.H. Gerth and C.W. Mills. New York: Oxford University Press.
- Wise, A.E., 1980. *Legislated Learning: The Bureaucratization of the American Classroom*. Berkeley: University of California Press.