School Restructuring as a Policy Agenda: Why One Size May Not Fit All

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Recent studies of school restructuring have suggested that a school's shift toward communal norms is likely to be accompanied by particular types of technical reform. The result has been the emergence of a prescriptive agenda of reform practices in the school-improvement literature, despite evidence that the usefulness and effectiveness of instructional practices vary across contexts. The study presented here examined the relationship between school restructuring (defined in terms of the use of "restructured" practices) on mathematics achievement across categories of school socioeconomic status. The findings raise questions about the suitability of defining restructuring in terms of any specific reform agenda and indicate the need for caution regarding the broad implementation of such an agenda in disadvantaged schools.

The concept of restructuring generally connotes a school's shift away from bureaucratic norms, structures, and practices, and this shift has been sketched along two distinct and independent dimensions. One dimension, the social or normative dimension, conveys the idea that schools can increase their power as institutions by reinventing themselves as supportive, collegial, and moral communities (Bryk and Driscoll 1988; Grant 1988). The other, the technical dimension, conveys the idea that schools can improve their academic effectiveness by replacing "traditional" curricular and instructional practices with more cooperative, integrated, and constructivist approaches (Center on Organization and Restructuring of Schools 1992; Newmann and Wehlage 1995). Within this framework, it made sense, for example, to view Catholic schools as models for the normative shift, even given their generally traditional core of technical practices. At the same time, many public schools could point to technical reforms as evidence of restructuring but remained largely unchanged in terms of their normative or moral impact on students.

Over the past decade, however, some studies have traced an association between these two dimensions, suggesting that as schools become less bureaucratic and more communal, they are also more likely to revise their curricular and instructional practices. Among the implications that have been drawn from this assertion are that evidence of technical restructuring is also evidence of normative restructuring and that the overall concept of restructuring can be operationalized in terms of a

school's adoption of particular curricular and instructional practices (see Lee and Smith 1995).

Such conceptualizations, however, appear to sidestep some nagging questions about school reform and its relationship to school effectiveness. For instance, may schools that are shifting toward more communal relationships and are rethinking their instructional practices be just as likely to adopt a "Catholic model"? That is, rather than implement extensive, sometimes costly and complex reforms, may they opt for incremental improvement, perhaps, for example, by increasing their emphasis on the importance of traditional academic work for all kinds of students? Rephrasing the question, one may ask, Do schools have to buy in to a particular agenda of technical reform to be considered restructured?

Another key question that is often dodged in the literature on restructuring, and the one highlighted in this article, is, To what extent should one expect the technical reforms linked to restructuring to produce consistent achievement effects across all types of schools? Given the body of research indicating that the relationships between students' learning and organizational or instructional practices often vary dramatically, depending on other school characteristics, such as average socioeconomic status (SES), urbanicity, and academic press, should one not also expect restructuring effects to vary in a similar fashion? In fact, several studies have suggested that low-SES urban schools attain greater effectiveness and higher achievement through the use of more traditional types of organizational and curricular arrangements, practices, and understandings (Hallinger and Murphy 1986; Shouse 1996, 1998).

On the basis of this line of evidence, our study examined the degree to which achievement effects associated with being a restructured school (defined in terms of the use of specific school practices) vary across lines of school affluence. Using a sample of public schools drawn from the National Education Longitudinal Study of 1988 (NELS:88), we found these effects to vary in magnitude and direction, depending on a school's average socioeconomic level. Specifically, for the public schools represented in our sample, we found restructuring to have (1) a significant positive achievement effect in average SES schools; (2) no significant achievement effect in high SES schools; and (3) a significant negative achievement effect in low-SES schools, especially very low-SES schools. Contrasting sharply with studies that have reported overall positive restructuring effects (but that have overlooked important differences in effects across categories of school SES), our findings raise questions about the validity of defining restructuring in terms of a single list of practices. They also demonstrate the need for local school policy makers to exercise some caution when considering the adoption of restructuring's technical reform agenda.

Two Views of Restructuring

Though generally conceived as representing a "purposeful change" in patterns of rules, roles, and relationships in schools (Corbett 1990), the concept of restructuring has been more recently cast with greater precision and at multiple organizational levels. For example, as indicated in the opening paragraph, some researchers have highlighted restructuring in terms of changes in school norms, particularly those governing school social relationships. Restructured schools are said to evidence decentralized forms of decision making that are informed by a heightened sense of collegiality among teachers (Darling-Hammond 1995; Murphy 1991). Teachers in restructured schools are said to take greater responsibility for students' learning, and the school culture is said to be marked by more personalistic relationships and a stronger ethos of caring (Louis, Marks, and Kruse 1996). In this sense, studies by Bryk and Driscoll (1988) and Grant (1988) have been important in laying out the theoretical foundation for the normative dimension of school restructuring.

In contrast to this conceptualization, however, more recent scholars have viewed restructuring in terms of a change in instructional focus and technique. In restructured schools, they have argued, classroom activities and teachers' evaluations of students become more cooperative, "authentic," and aimed more at developing "thinking skills"

than at accumulating specific content knowledge (Elmore 1990; Murphy 1991; Newmann 1996). Although such ideas are not new (they fit well within the classic ideal of progressive schooling), they received a good deal of impetus from the Carnegie Council on Adolescent Development's (1989) report on middle school education, which called for such innovations as team teaching, cooperative learning, and the elimination of tracking.

Although there is some overlap between these two understandings of restructuring, we view them as clearly distinct. For example, increased collegiality among teachers may lead to team teaching. On the other hand, it may not, and school administrators can certainly impose team teaching on their professional staffs—perhaps to increase collegiality, perhaps to demonstrate authority or conformance with current popular educational trends. The distinctiveness of the two dimensions is also revealed in the various "effective schools" studies of the 1980s, which called not only for the expansion of traditional school practices and characteristics (more stringent course requirements, "direct instruction," and the like), but for more communal features (such as having a common academic curriculum for all students and a stronger "sense of community" in the school) (Good and Brophy 1986; Hallinger and Murphy 1986).

Both understandings of restructuring rest on the belief that it can help raise the level and quality of academic achievement among American students (Newmann 1992, 1996). Testing this belief, however, requires a satisfactory operationalization of the concept, so its achievement effects can be empirically measured. Bryk and Driscoll (1988), for example, operationalized communality along three dimensions (common beliefs and values, a common agenda of activities, and a pervasive ethos of caring) using an array of items from the High School and Beyond study. Devising an index to measure the degree of communality within the sampled schools, they reported a positive relationship between communality and students' achievement. In terms of the technical view of restructuring, operationalization is less of a problem, at least in secondary studies that have used large-scale national data that include items representing specific instructional practices deemed to be "restructured." Here, however, studies of the direct impact of such practices have produced mixed effects at best.

Lee and Smith (1995) attempted to pull the technical and social dimensions of restructuring together in a single analytic framework. At the heart of their analysis rested the assumption that normative change tends to accompany technical change. Lee and Smith thus viewed a school's adoption of "restructured practices" as evidence of its shift toward more collegial, communal, and caring relationships. After identifying indicators of 12 such practices in the NELS:88 10th-grade data set, they categorized schools as restructured if the schools had implemented at least 3 of the 12 items (as indicated primarily in principals' reports—see Table 1 for a list of these items).[1] Among the results of their analyses was the finding that students who attended restructured schools attained significantly higher levels of achievement than did those who attended more traditional types of schools. Moreover, the gaps in achievement between students from different socioeconomic backgrounds were significantly smaller in the restructured schools.

Most of the 12 practices listed in Table 1 relate to the core technology of schooling (that is, they involve organizational or curricular arrangements for delivering instruction to students). Some relate more to the establishment of teachers' collegiality and empowerment or students' and parents' attachment to the school. And though it is plausible that several of the practices may be connected to students' achievement, empirical evidence of their impact continues to be either mixed or contested. It is important to understand, however, that Lee and Smith's (1995) arguments about restructuring do not depend on the direct achievement effects of any practice listed in Table 1. Nor did Lee and Smith claim that schools can improve themselves by adopting any three of these practices. Rather, they suggested an indirect relationship, arguing that the presence of some reasonable number of these practices signifies a school's

Table 1. NELS:88 First Follow-up Survey Items Representing Restructured Practices

Students keep the same homeroom throughout high school.
Emphasis is placed on the staff solving school problems.
Parents volunteer in school.
Interdisciplinary teaching teams are used.
There is independent study in mathematics and science.
There is independent study in English and social studies.
There are mixed-ability classes in mathematics and science.
There is a focus on cooperative learning.
Students' evaluations of teachers are important.
The school-within-a-school organizational design is used.
Teacher teams have a common planning time.
There is flexible time for classes.

Source: Lee and Smith (1995).

shift toward a more communal form of organization.

Although we believe that this assumption requires further examination, the use of this or any list of practices to operationalize the concept of restructuring is problematic for other reasons. From a practical standpoint, it allows a number of what may be academically neutral (or even academically questionable) practices to ride piggyback into the arena of discourse on school improvement. Team teaching across content areas, for example, represents a considerably complex technology, the academic impact of which has not been empirically demonstrated.[2] Packaged within the restructuring agenda, however, the idea acquires a degree of normative momentum. A bandwagon effect can develop that may overshadow the influence of sound empirical evidence on local school or district policy making.

Differential Paths to Effectiveness

This sort of "agendizing" of the restructuring concept is also troublesome in the way it clashes with some substantial theory and evidence that organizational characteristics or instructional practices that are linked to school effectiveness in one context may be ineffective or even counterproductive in others. For example, Hallinger and Murphy (1986) found that effective high- and low-SES schools function differently in terms of principal-teacher relations, decision making, and parental involvement. Principals in low-SES schools tended to be "task oriented," exercising tight controls over curriculum and instruction, whereas principals in high-SES schools tended to be more "relationship oriented," allowing teachers greater autonomy in exercising professional judgments. While principals of high-SES schools sought to establish strong ties to their surrounding community, their low-SES counterparts worked hard to insulate their schools from external influences that might interfere with the attainment of academic goals. In short, leadership in effective low-SES schools tended to be more authoritative and traditional; in effective high-SES schools, it appeared to be more interpersonal and collegial.

We believe it would be incorrect, however, to conclude that the high-SES schools studied by Hallinger and Murphy (1986) were more "communal" than their low-SES counterparts. In fact, both these organizational styles bear some elements of the "schools as communities" ideal. The low-SES schools seemed to operate somewhat in line with the Catholic model; that is, they relied on an authoritative and clearly articulated vision and on well-defined organizational boundaries. In the high-SES schools, communality appeared to be a more secular phenomenon; with its vision derived from consensus and local community support and expectation, there was less of a need for rigid organizational bound-

aries. It thus seems questionable whether many of the practices listed in Table 1 could equally represent both styles of communality.

Also noteworthy, when coupled with Hallinger and Murphy's study (1986), is evidence from the so-called effective schools studies of the 1980s. The "effective practices" that emerged from that literature not only conveyed a relatively traditional and intensified approach to teaching and learning (Elmore 1990), but were typically based on evidence from urban elementary schools (Good and Brophy 1986). Such evidence led us to suspect that achievement effects associated with some kinds of restructuring practices would differ across categories of school urbanicity or SES.

Further evidence to support this suspicion can be found in studies of the achievement effects of high school academic press and communality. Shouse (1996), for example, found the pattern of achievement effects associated with these characteristics to differ dramatically across categories of school SES. In his study, academic press was defined as the degree to which school organizational culture was driven by traditional achievement-oriented values, norms, and goals. Communal organization was defined along lines similar to those in Bryk and Driscoll (1988). Among moderate and high-SES schools, higher levels of communality were associated with higher mathematics achievement. Among low-SES schools, however, the relationship between communality and achievement hinged on the strength of a school's academic press. When academic press was weak, higher levels of communality were associated with lower levels of mathematics achievement. When academic press was high, communality wielded a significant positive achievement effect. Part of Shouse's argument in this regard was that for schools serving disadvantaged or disaffected youths, the objective and universalistic elements of academic press served as a check on the tendency for subjective, personalistic, and/or therapeutic forms of caring to take center stage in place of a universal expectation of rigorous academic activity.

A subsequent study of middle and junior high schools (Shouse 1998) not only revealed a similarly strong connection between academic press and achievement in urban schools, but reported additional findings that run counter to the claims of some advocates of technical reform. Specifically, the study found that the use of cooperative learning and middle school grade configuration were linked to significantly lower levels of mathematics achievement in urban schools. It also found significant positive achievement effects associated with urban schools' use of more traditional practices, such as ability grouping in mathematics and the presence of formal policies emphasizing the importance of daily homework. Highlighting the value of certain traditional types of social understandings and technical practices, particularly within disadvantaged schools, the study suggested that some kinds of restructuring initiatives may not produce the same academic benefits for students in low-SES urban schools as for their more affluent peers.

Technological Complexity and Resource Scarcity

Beneath this empirical evidence, what theoretical basis exists for suspecting that contextual differences may alter the impact of restructuring practices in disadvantaged schools? In our view, the problem is essentially related to the deficits in human and social resources with which low-SES schools must often contend, as well as to the high complexity associated with many restructuring practices. Juxtaposed against an organizational task laden with difficulty and uncertainty, that of raising academic achievement among socially disadvantaged students, the scarcity of resources and technological complexity constrain the ability of these schools to implement many types of restructuring reforms successfully. We briefly trace the argument here and treat it more fully in the Discussion section.

In terms of resources, several studies of school achievement have emphasized the differential availability of social and cultural capital across boundaries of school affluence (Coleman and Hoffer 1986; Hirsch 1996; Shouse 1996). These studies have indicated the ways in which students from advantaged communities tend to have greater access to

the type of background knowledge and social support structures that are necessary for school success. Schools that serve such communities can tap in to this advantage in two ways. First, their students' broader knowledge base increases the likelihood that some types of restructured classroom practices will be effective (such as those that emphasize constructivist or student-centered learning and the acquisition of higher-order knowledge). Second, the availability of denser, more academically oriented social support structures in advantaged communities helps reinforce and facilitate schools' academic goals. In other words, a "safety net" is available to students in advantaged schools that reduces the potential risks of flawed, poorly executed, or highly complex instructional practices.

In addition to lacking these social resources, disadvantaged schools suffer from a dearth of certain kinds of human resources (such as high-quality teaching staffs and low rates of turnover and absenteeism among teachers) that are crucial for the successful implementation of many of the complex technical reforms often recommended by advocates of restructuring. For disadvantaged schools, then, implementing the types of systemic reform represented in the school-restructuring literature may be a much riskier venture than for their more affluent counterparts. Disadvantaged schools may reduce or avoid the risk by focusing on incremental reform: improving their more traditional, but less complex practices, rather than substituting them with more radical reforms. The quandary they face seems well captured by Graham's (1985:12) metaphor comparing progressive and traditional schooling:

> Let us consider American progressive education as pork chops, and traditional education as apples. . . . A pork chop at its best is absolutely wonderful and is enhanced by the addition of a baked apple. But the pork chop half done, half cooked . . . will give you trichinosis. The baked apple half cooked is not very imaginative, but is still very nutritious.

At the risk of belaboring the analogy, we suggest that for disadvantaged schools, the situation boils down to one in which they are able to serve students a more nutritious program by focusing on basic recipes (we return to this point in our final discussion). If we are correct, then we would expect to find some negative consequences for disadvantaged schools that attempt to deliver a more elaborate or skill-intensive style of cuisine.

METHODOLOGY

Source of the Data

Our analyses are based on data from the NELS:88 first follow-up (10th-grade) survey. Conducted by the National Center for Education Statistics (NCES), NELS:88 examined students' educational experiences from the 8th grade through high school and into college, highlighting family, community, school, and classroom factors that influence educational success.

Beginning with a base-year (8th-grade) survey, NELS:88 also included first (10th-grade) and second (12th-grade) follow-up surveys. To obtain a representative sample of American public and private school students, the base-year survey began with a representative sample of 1,035 8th-grade public and private schools, stratified by region, urbanicity, and minority enrollment. A random sample of students was obtained in each school, resulting in an overall sample of approximately 24,599 students. In addition to a questionnaire, each student in the base-year survey completed cognitive tests in history, mathematics, reading, and science. Questionnaires were also administered to a parent, the principal, and two teachers (one from science or mathematics, the other from English or social studies) of each student.

The NELS:88 first follow-up survey (conducted in 1990) had the same basic components and student sample. However, in following students in the base-year sample to their 10th-grade schools, researchers who are examining school effects must grapple with three methodological issues. First, the students no longer represent a random sample in each high school. Second, the schools they attended no longer constitute a probability sample of schools similar to that of the base-year study. Finally, in many schools, the sizes

of the student and teacher samples no longer permit a comprehensive analysis of school effects.

To address these issues, this analysis used a subsample of 371 first follow-up public schools with at least 15 NELS-sampled students (resulting in a total student sample of 6,994 with an average of 19 NELS-sampled students per school).[3] This filtering helped increase the reliability of both our measure of school-level SES and of the hierarchical models produced in our analysis. We chose to limit our analysis to public schools because it is on these schools that reform efforts tend to focus. In addition, because our interest centered on "typical" comprehensive high schools, this subsample excluded vocational schools and schools in which 30 percent or more of their students were placed in remedial reading or "alternative" programs.

Besides the reduction in size, the primary result of our school-sampling strategy was that compared to the overall NELS sample, ours overrepresented public schools with large student enrollments. This overrepresentation is not really undesirable, however, since the problem of increasing school effectiveness is of particular concern for large public schools (Bryk, Lee, and Holland 1993). If, for instance, our findings differed from those obtained from some theoretically representative sample of American high schools, they would still indicate a differential pattern of effect for the larger public high schools represented in our subsample.

General Analytic Strategy

We examined the achievement effects of restructuring within categories of school SES using hierarchical linear modeling (HLM), a type of multiple regression that is useful in examining student and school factors associated with variation in achievement. Using HLM, the total variation in student achievement can be separated into its student-level and school-level components. Separate regression equations (or "models") are then specified to explain the variation at each level. The intercept of the student-level equation represents the estimated grand mean achievement across the sampled schools, adjusted for the specified student-level variables. The individual school means that make up this grand mean serve as the dependent variable of the school-level equation (which links school-level variables to variation in achievement levels across schools).

In our analysis, which focused primarily on the achievement effects of school-level characteristics, the student-level model served mainly as a set of controls, that is, to reduce the likelihood that any observed school-level effects might actually result from differences in student composition across schools. For example, our student-level model included variables representing student SES, race, high school program (academic, general, or vocational), prior course work in mathematics, and prior academic ability. (See Table 2 for descriptive statistics of all variables used in this analysis.)

Our school-level models included several types of variables. First, a categorical variable (labeled RESTRUCT) was included to indicate whether a school was classified as restructured. In classifying schools as "restructured," we used a criterion similar to that used by Lee and Smith (1995). That is, schools were considered restructured if their principals reported the use of at least three "restructuring practices" (see Table 1) and nonrestructured if they did not (see note 1). Next, a continuous measure of school-average SES was included (based on the average SES of the NELS-sampled students in each school) to control for the impact of school affluence. Labeled MEANSES, this continuous measure was then used to assign schools to one of three categories of average SES based on cut points of 1 standard deviation above and below its mean. This process resulted in a breakdown of 55 high-SES schools (with 1,102 students), 263 middle-SES schools (with 5,081 students), and 53 low-SES schools (with 1,028 students).

Because the first round of HLM analysis revealed negative restructuring effects in low-SES schools, an additional category of "very low-SES" schools was created, consisting of 32 schools (14 of which were "restructured") falling more than 1 1/4 of a standard deviation below the overall mean of MEANSES. These categorical indicators of school affluence

Table 2. Description of Variables and Simple Statistics

Variable	Description	All Schools		Low-SES		Mid-SES		High-SES	
		Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Student Level									
F12XMIRR	10th-grade standardized mathematics IRT score (dependent variable)	0.00	1.00	-0.48	0.90	-0.03	0.99	0.59	0.90
SEX	Equals 1 for female	0.51	0.50	0.52	0.50	0.50	0.50	0.51	0.50
F1SES	NELS:88 student SES composite	0.00	1.00	-0.77	0.89	-0.04	0.89	0.91	0.86
MINOR	Equals 1 for black and Hispanic student	0.18	0.38	0.39	0.49	0.15	0.36	0.08	0.27
ACTRACK	Equals 1 for student in academic program	0.35	0.48	0.28	0.45	0.35	0.48	0.37	0.48
VOTRACK	Equals 1 for student in vocational program	0.15	0.35	0.21	0.41	0.15	0.35	0.08	0.27
F1S22SUM	Number of semesters in mainstream mathematics since the 8th grade	2.84	1.95	2.24	2.07	2.82	1.93	3.54	1.69
BY2XMIRR	8th-grade standardized mathematics IRT score	0.00	1.00	-0.48	0.82	-0.03	0.97	0.60	1.01
School Level									
MEANSES	School mean SES	0.00	1.00	-1.44	0.38	-0.08	0.53	1.71	0.47
RESTRUCT	Equals 1 for restructured school	0.54	0.50	0.44	0.50	0.53	0.50	0.68	0.47
APRESS	Academic press composite (see the Appendix)	0.00	1.00	-0.50	0.89	-0.13	0.88	1.06	0.89
COMM	School communality composite (see the Appendix)	0.00	1.00	-0.40	1.13	-0.03	0.93	0.52	0.96

were, in turn, used to construct dummy interaction terms that were designed to tease out the differential impact of restructuring across categories of school affluence.

Finally, given the conceptual and empirical connections established in previous studies among school restructuring, communal organization, and academic press, we deemed it important to distinguish and control for the influence of the latter two characteristics on students' achievement. Doing so also enabled us to gauge the extent to which restructuring effects were attributable to either of these two factors. Variables developed previously (Shouse 1996; see also Bryk and Driscoll 1988) were used to represent school academic press and communality (See the Appendix for details on these two variables.)

Dependent Variable

Student achievement is represented by NELS:88 mathematics IRT (item response theory) scores (see NCES 1994). Although NELS:88 also includes reading, history, and science scores, the mathematics scores represent the most valid indicator of school effectiveness. For one thing, because the mathematics test contains the greatest number of items and ability levels, it is most immune to floor and ceiling effects. In addition, mathematics scores are more likely to reflect in-school learning than are scores in other subjects (Haney 1996; Karweit and Ricciuti 1997). For technical information on the validity and reliability of NELS:88, see Rock, Pollack, and Quinn (1995).[4]

RESULTS

Table 3 displays the results of our analysis. As is customary in presenting HLM results, school-level effects are presented in the top panel and student-level effects in the bottom panel. In the HLM analysis reported here, student-level variables are "centered" around a mean of 0.[5] This centering does not affect the way coefficients are interpreted, and it allows the school effects reported in the top panel to reflect the experience of an average general-track student. At the school level, continuous measures (such as MEANSES, APRESS, COMM, and the dependent variable representing students' mathematics achievement) were rescaled to a mean of 0 and a standard deviation of 1. Thus, for these variables, the coefficients reported in Table 3 are standardized; that is, they represent the difference in mathematics achievement (measured in standard deviations) associated with a difference of 1 standard deviation in the particular independent variable. The dummy variables (RESTRUCT, LOWSES, VLOWSES, HISES, and the interaction terms created from them) have not been standardized. Their coefficients thus represent additive or diminutive effects associated with being a particular type of school.

Table 3 presents two HLM models, each one designed to tease out the interaction between the effects of restructuring and school SES.[6] The model represented in the first column highlights the impact of restructuring in low-SES schools; the second does the same for very low-SES schools. As was noted earlier, each model controls for the effects of school average SES and school levels of communality and academic press.

The equation represented in the first column of Table 3 reveals that the base effect associated with being a restructured school is small (.03). Although this effect does not meet a 95 percent level of confidence, it suggests that within this sample of public schools, restructured schools outperform nonrestructured schools in mathematics achievement by an average of 3 percent of a standard deviation. (It should also be pointed out that school effects are generally considered "substantive" if their standardized coefficient is at least .10.) A scan down the first column, however, reveals that the effect of restructuring in low-SES schools is negative (LOWSES*RESTR, -.08). These effects are additive. Thus, achievement levels in low-SES restructured schools average 5 percent of a standard deviation below those in other restructured schools and 8 percent of a standard deviation below those in nonrestructured schools.

On the basis of this pattern of effect, we focused on the impact of restructuring among schools that were even more disad-

Table 3. Restructuring Effects on Mathematics Achievement (standardized HLM coefficients, standard errors in parentheses)

Variable	Description	I	II
School Level			
RESTRUCT	Restructured school	.03 (.02)	.03 (.02)
MEANSES	School mean SES	.04* (.02)	.02 (.02)
LOWSES	Low-SES school	.02 (.04)	—
LOWSES*RESTRUCT	Low-SES restructured school	-.08* (.04)	—
VLOWSES	Very low-SES school	—	.01 (.05)
VLOWSES*RESTRUCT	Very low-SES restructured school	—	-.12* (.06)
HISES	High-SES school	.05 (.05)	.05 (.05)
HISES*RESTR	High-SES restructured school	-.06 (.05)	-.06 (.05)
COMM	School communality	.01 (.01)	.01 (.01)
APRESS	School academic press	.04* (.01)	.04* (.01)
Student Level			
SEX	Student's sex	.02* (.01)	.02* (.01)
F1SES	Student's SES	.02* (.01)	.02* (.01)
F1S22SUM	Number of semesters in mainstream mathematics since the 8th grade	.08* (.00)	.08* (.00)
VOTRACK	Vocational program	-.08* (.02)	-.08* (.02)
ACTRACK	Academic program	.10* (.01)	.10* (.01)
MINOR	Black or Hispanic student	-.09* (.02)	-.09* (.02)
BY2XMIRR	8th-grade achievement	.74* (.01)	.74* (.01)

* Coefficient at least twice its standard error.

vantaged, those falling into the very low-SES category (1 1/4 of a standard deviation below the mean). The equation presented in the second column of Table 3 differs from that presented in the first column in one important way. In the first model, we compared restructuring effects in high- and low-SES schools with those in mid-level SES schools. The second model offers a similar type of comparison, but the variables that previously represented low-SES schools were replaced with variables representing very low-SES schools. In other words, the base category of mid-level SES schools was expanded downward to include 21 additional schools that were previously included in the low-SES category (those with MEANSES values between -1 and -1.25). The restructuring effects for high-SES schools remain separated in this model so that contrasts may be drawn between restructuring effects in the middle and lowest school-SES categories.

The point of key interest in the second column of Table 3 is the negative restructuring effect for very low-SES schools (-.12). The effect indicates that when the effects of the other school variables are held constant, mathematics achievement levels in restructured schools in the very low-SES category average 12 percent of a standard deviation lower than in the restructured mid-level SES schools. In addition, subtracting the negative effect for very low-SES schools from the main restructuring effect reveals that among schools in the lowest SES category, nonrestructured schools outperform their restructured counterparts by 9 percent of a standard deviation (again, with other school-level effects held constant).

Aside from the restructuring effects highlighted in Table 3, one also notes a significant, albeit small, effect associated with the measure of school academic press and a virtual noneffect associated with the measure of school communality. It should be noted, however, (based on exploratory analyses not tabulated here) that the inclusion of these variables had virtually no influence on other effects reported in the two models presented in Table 3.

DISCUSSION

Our findings validate the concerns raised earlier about the claims of various studies of school restructuring. First, we found that for large public schools of the type examined in this study, the magnitude and direction of restructuring effects are not consistent across all levels of school affluence. Restructuring effects are largely nonsignificant for schools that primarily serve students of average or above-average affluence and are significantly negative for those that mainly serve disadvantaged students. These results reinforce our concern that local school policy makers need to maintain some healthy skepticism about the usefulness of any broadly prescribed systemic reform agenda. In particular, leaders and decision makers in schools serving predominantly low-income communities may need to exercise caution in adopting complex educational practices.

We suspect that the technological complexity associated with certain restructuring practices (for example, team teaching, cooperative learning, and heterogeneous grouping) accounts for at least some of the pattern of effects revealed in our analyses.[7] As instructional practices become more complex, they not only stretch the capacities of teaching staffs, but become riskier in terms of increasing students' achievement. To illustrate, consider students' achievement as a function of (1) the availability of academically oriented social capital outside school and (2) teachers' instructional skill. Compared to students in disadvantaged communities, students in more affluent communities tend to have greater access to academically oriented social capital, and their teachers tend to be more highly skilled. Thus, not only do their teachers tend to be better prepared to implement restructured practices effectively, but, even if they are not, the availability of an "academic safety net" outside the schools will also buffer students' achievement from teachers' professional mistakes and shortcomings. Unfortunately, for large low-SES urban schools, the situation tends to be reversed. The teachers in these schools tend to be less prepared to implement complex practices successfully, and the consequences of their

mistakes more directly affect their students' academic achievement.

Having pointed out the difficulties that particular types of restructuring reforms pose for disadvantaged schools, we think it is important to emphasize that our analysis is not intended as a criticism of any particular restructuring reform or of efforts by disadvantaged schools to experiment with alternative organizational or curricular arrangements as a means of improving instruction. But it seems natural to us that leaders and decision makers in such schools would tend to "restructure" their schools in different ways, depending on their perceptions of organizational needs and constraints. In some schools, restructuring may involve striving for greater professional collegiality or decentralized decision making. In others, it may mean adopting, modifying, and/or improving upon traditional instructional practices, starting a schoolwide discussion about core values, or finding ways to increase academic press.

This kind of activity, we believe, is incongruent with externally devised checklists or templates for school improvement. Ironically, such external designs may actually encourage local or district administrators to impose "restructured" arrangements on their professional staffs. In one case, an urban high school principal, frustrated over teachers' skepticism regarding a district-proposed local school site-management plan, stated angrily to her staff, "People, understand this! We *will* become an empowered school!" (quoted in Boyd and Shouse 1997:154).

Again, we emphasize that the point here is not to denigrate the various practices included in the restructuring agenda or to cast undue praise on those they are intended to replace. Instead, our major point is that if school restructuring is to be meaningful, researchers, administrators, and teachers must take great care that it is not transformed into another policy bandwagon that all must ride. We argue—and our study indicates—that there are multiple avenues to school effectiveness and that "tradition" and "restructuring" are not signposts on opposite ends of the road. As Cuban (1998) noted, school "goodness" can be found in both traditional and progressive settings. Our evidence echoes his view and suggests the need for researchers, administrators, and teachers—particularly those who are concerned about or working in disadvantaged schools—to think more critically, incrementally, and intuitively about school restructuring and reform.

NOTES

1. In addition to identifying "restructured" schools, Lee and Smith (1995) also identified what they referred to as "moderate" and "unrestructured" schools, based on the schools' use of other types of practices and reforms.

2. For an excellent case-study analysis of the complexity and resource demand of thematic team teaching, see Meister (1997).

3. This subsample was developed by Shouse (1994) to examine the impact of school academic press and communality on students' achievement.

4. In our analyses, we opted to use 10th-grade mathematics achievement scores as our dependent variable while controlling for 8th-grade mathematics achievement. This design contrasts with the design used by Lee and Smith (1995), which used 8th- to 10th-grade mathematics achievement gain as a dependent variable. In Lee and Smith's design, controls were included for 8th-grade ability in reading, history, and science, but not in mathematics. On the basis of our exploratory analyses (using a NELS subsample similar in size to that used by Lee and Smith), we suspect that their design unintentionally obscured the impact of school affluence on students' achievement by not fully controlling for the possibility of ceiling and floor effects.

Specifically, although our variable representing school mean SES is a significant predictor of 10th-grade mathematics achievement (after the effects of 8th-grade mathematics achievement are controlled), it does not significantly predict 8th- to 10th-grade mathematics achievement gain unless a control is included for 8th-grade mathematics achievement. In fact, when this variable is included, higher 8th-grade mathematics achievement scores are associated with signif-

icantly lower 8th- to 10th-grade mathematics achievement gain. We suspect that this association results from residual floor and ceiling effects associated with the NELS:88 mathematics test. (We say "residual" because NELS includes design elements that are intended to mitigate the impact of such effects.) In other words, without controls for prior mathematics ability, the association between school mean SES and achievement gain appears misleadingly weak because it is easier for students who start at lower levels of achievement to show larger gains.

5. Student-level variables in this analysis were "fixed" and grand-mean centered. See Bryk and Raudenbush (1992:202–03) or Shouse (1994:102–04).

6. Relevant variance statistics for the models reported in Table 3 are as follows: (1) 85 percent of the variation in the dependent variable is within schools and 15 percent is between schools, (2) the six student-level controls account for 77 percent of the within-school variance, and (3) 73 percent of the school-level variation is accounted for by school-mean SES (MEANSES) and an additional 5 percent of the school-level variance is accounted for by the remaining school-level variables.

7. Though our study did not trace significant negative effects to any specific restructuring practice, we found that 9 of the 14 very low-SES schools had adopted either team teaching or cooperative learning. In addition, exploratory analyses revealed that compared to their low-SES and moderate-SES counterparts, these very low-SES schools were significantly more likely to have adopted one or the other of these two practices.

APPENDIX

Indicators of School Academic Press and Communality

The following are general descriptions of the NELS:88 items used to represent academic press and communality. Some characteristics listed here were represented by more than one NELS item. See Shouse (1996) for a more detailed description.

Indicators of School Academic Press

Academic Climate

* Principals' report regarding academic climate (class activities are highly structured, students expected to do homework, students encouraged to compete for grades, students encouraged to take academic classes)
* Principal's report of the extent to which the school honors and publicizes students' achievement
* Semester requirements in mathematics and foreign languages
* Percentage of teachers in the school with at least a master's degree
* The extent of "mainstream" course taking in science and the humanities
* Students' perception of the overall school academic demand

Disciplinary Climate

* School policies on absenteeism, misbehavior, and parental notification
* Teachers' and students' perceptions of the disciplinary policy and climate
* School policies regarding students' absence from school

Teachers' Instructional Practices and Emphases

* Emphasis on an absolute level of achievement in determining students' grades
* Emphasis on covering the curriculum, developing students' understanding, and creating enjoyable lessons as instructional goals
* Teachers' homework policies: amount assigned and regularity of feedback
* Teachers' reports of having contacted parents of poorly performing students
* Time spent by teachers in planning and preparing out of school
* Students' reports of classroom instructional quality and academic demand

Indicators of School Communality

Shared Values

* Teachers' agreement about school and classroom goals
* Teachers' consensus on core beliefs and values
* Teachers' belief that students can learn
* Principal's and teachers' agreement on school policies
* Principal's and teachers' agreement on attitudes toward students

Common Agenda of Activities

* Track similarity
* Course-taking similarity in mathematics, science, English, social studies, and foreign languages
* Proportion of students in extracurricular activities
* Proportion of students in leadership roles

Ethos of Caring and Collegiality

* Teachers' perception of faculty cooperation and collegiality
* Percentage of teachers reporting that they seek help from colleagues in and out of their own department
* Teachers' reports of time spent on cooperative projects
* Staff commitment to evaluation
* Teachers' perception that the school seems like "one big happy family"
* Students' perception that teachers show interest in them as people
* Students' perception that teachers really listen to what they say

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This research was supported by a grant from the American Educational Research Association, which receives funds for its AERA Grants Program from the National Science Foundation, and the National Center for Education Statistics and the Office of Educational Research and Improvement (U.S. Department of Education) under NSF Grant RED-9452861. Opinions reflect those of the authors and do not necessarily reflect those of the granting agencies. The authors' names are listed alphabetically because each contributed equally to this work. Address all correspondence to Dr. Roger C. Shouse, Department of Education Policy Studies, College of Education, Pennsylvania State University, 302B Rackley Building, University Park, PA 16802; E-mail:rcs8@psu.edu.