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AUTHOR Hannaway, Jane; Talbert, Joan E.
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ABSTRACT

Findings from a study that examined the relationship between external environmental factors and effective school conditions are presented in this paper. A focus is on the ways in which the different "educational worlds" of urban, suburban, and rural high schools shape internal school processes. Methodology involved an analysis of the relationship of principal leadership and the teacher community to three categories of context variables--student characteristics, staff composition, and organizational context. High School and Beyond, a national longitudinal program, provided the data sources--a 1984 survey of 321 high schools and 4 data files on student, school, administrator, and teacher characteristics Findings indicate that although the school systems differed in their social, political, and organizational settings, collegial support and principal leadership were fairly equally distributed across schools in the three sectors. Gender and district size were also significant variables. A recommendation is made for conducting "tailor-made" studies with a broader scope of analysis to formulate sensible policies within different settings. Three tables are included. The appendix contains measures of school organization variables. (20 references) (LMI)

CRC

Center for Research on the Context of Secondary Teaching
School of Education, CERAS Building, Stanford University, Stanford, CA 94305-3084

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Jane Hannaway
Joan E. Talbert

Stanford University

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Jane Hannaway and Joan E. Talbert

INTRODUCTION

AMERICA 2000, President Bush's strategy for improving education, views individual schools as the "site of reform" and the "key action-and-accountability unit." The strategy implicitly assumes that it is somehow within the capacity of all schools to develop conditions necessary for school effectiveness. Two conditions no doubt necessary for schools to meet the challenges set forth in **AMERICA 2000** are school leadership and a community of committed professionals in the school. Not surprisingly, these are two of the conditions that "effective schools" research has found distinguish successful from unsuccessful schools.[1]

The widespread attempts at establishing effective school conditions across the country[2] suggests that tenets of the effective schools movement conform to professional judgments about best practice in a variety of different school and district settings. But general agreement about the virtues of establishing effective schools conditions does not imply that establishing these conditions can be easily accomplished across all settings. In fact, it quite likely that some schools face a far more difficult challenge than others in establishing, for example, staff collegiality or strong principal leadership by virtue of conditions over which they have little control -- such as the selection of faculty and principals, the size of the school, or district policies affecting school autonomy. Research, however, has given

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[1] For a comprehensive review of the effective school literature, see Purkey and Smith, 1983.

[2] A recent GAO report indicates that in the 1987-88 school year 41% of U.S. school districts were establishing some type of effective schools program (ESP) and another 17% planned to implement one within the next two years (GAO, 1989). By the 1989-90 school year, then, over half of all U.S. school districts had one or more schools in which an ESP is underway and at least 31 states offer some kind of ESP support to districts (GAO, 1989).

little attention to factors that facilitate or impede a school's capacity to develop productive internal conditions.

This paper focuses directly on this question. We ask how factors in the external environment of public high schools influence the "natural occurrence" of effective school conditions. We are especially interested in the ways in which the "different educational worlds" (Witte and Walsh, 1990) of urban, suburban, and rural schools shape what happens in schools. To assess these differences, we use national survey data on the internal conditions of schools and available measures of their organizational environments in 1983-84, a period in which less than 10% of U.S. school districts report having an "effective schools" program. An answer to this question is timely given the implicit assumptions of **AMERICA 2000** about the capacity of schools.

Unlike most analyses of national survey data, this study distinguishes urban, suburban, and rural educational systems as basic contexts within which the importance of particular environmental factors may vary. We assume that the metropolitan status of schools represents an important social and organizational frame for policy-oriented research on schools. Findings, for example, on the external conditions important for effective schools among urban schools may not apply to suburban schools or to rural schools. If research on what makes schools effective is to be useful to local policymakers, we need to document better the diversity among U.S. public schools and to test an implicit assumption of most survey-based research that general models specified for the aggregate apply to all kinds of school settings. Recent findings that show effective school conditions are more likely to occur in suburban than urban schools support this view (Witte and Walsh, 1990).

Our analysis focuses on three kinds of environmental or context variables: client characteristics, labor force characteristics, and the local organizational environment. These context categories are analytically distinct and their possible

relevance to internal school conditions have very different implications for advancing theory and policy concerned with school effectiveness.

We begin by reviewing how the effective schools literature has addressed the issue of context effects on effective schools conditions. We then describe the data and findings of our analyses.

Where is Context in Effective Schools Research?

Effective schools literature has paid very little attention to factors in the external environments of schools that support or inhibit effective internal conditions. We distinguish "first" and "second" generation effective schools research as we review prior consideration of context factors. The first generation began by identifying schools that were unusually effective and unusually ineffective in promoting the academic achievement of comparable students and then, through field methods, described internal processes that distinguish these schools. (See for example, Edmonds, 1979; Rutter et al., 1979; Weber, 1971). These studies typically used small samples of schools similar in social and broader organizational context.

Second generation research uses larger survey data bases and quantitative analysis to assess effective school conditions. It was stimulated by the release of 1984 national survey data from the High School & Beyond program. The 1984 special survey of teachers and administrators (ATS supplement) was designed to yield measures of internal school processes in a nationally representative subsample of High School & Beyond schools. We briefly summarize research based on these data and other relevant survey-based studies. While this research has been more interested in, and more able to assess, context effects on school effectiveness, the agenda for this research has been set in the national arena and attention has overwhelmingly focused on sector effects (Coleman, Hoffer and Kilgore, 1982; Coleman and Hoffer, 1987; Chubb and Moe, 1990). Two

studies (Purkey and Rutter, 1987; Witte and Walsh, 1990), however, have focused on public sector context differences, specifically urban-suburban differences, and we discuss them as a lead-in to our study.

First Generation Research

First generation studies focused intensively on the internal school conditions associated with student academic achievement. These studies form the research base of effective school programs (ESPs). The studies were not designed to assess the role of school contexts in shaping their success, but to illuminate internal school differences that make a difference for student achievement. Two observations on context emerged from first generation studies. First, parental support was identified by some of the effective schools studies as a factor common among the academically successful schools. This finding is highlighted in many ESP efforts and is an example of an ESP factor that faces tremendous implementation obstacles in many schools: for example, those with large numbers of single-parent families.

Second, reviews of the early effective schools literature emphasized the context biases of the studies and urged caution in extrapolating the results. In particular, the relatively high representation of urban elementary schools and small schools in effective schools studies may have biased the results (Purkey and Smith, 1983; Rowan, Bossert and Dwyer, 1983). Here the attention to context concerned the generalizability of findings and the possibility of interaction effects: the internal conditions of effective suburban or rural schools, or effective high schools, or effective large schools may not be same as those yielded by the unrepresentative sample of schools studied.

Second Generation Research

Second generation effective schools studies have used survey data for larger and more representative samples of schools. Much of this work was made possible by the ATS national survey data. Some of these studies have focused heavily on assessing internal

conditions of schools that foster their success, paralleling first-generation research (Newman, Rutter and Smith, 1989; Bryk and Driscoll, 1988). As already noted, other research has been preoccupied with assessing sector effects on school success.[3] In each genre, studies included some school context variables of interest here, and we summarize relevant findings below.

Bryk and Driscoll (1988) analyze sector and other context effects on internal school variables that predict teacher and student outcomes. Their findings using sophisticated hierarchical modeling techniques closely parallel those of first generation field-based research, highlighting the importance of shared staff values and collegiality as cultural dimensions of effective schools. They isolate five context variables as relevant to effective school communities: sector (+ private), school size (-), student diversity (-), control over student entry (+) and positive parent-school relations (+).

Research reported by Newman, Rutter, and Smith (1989) suggests that specific context variables are associated with specific effective school conditions. In particular, they found that school size predicts teacher community (-) and students' prior academic performance predicts teacher efficacy and expectations for student success (+). Another analysis of the ATS data by Rowan, Raudenbush and Kang (1989) found positive effects of private school sector on principal leadership and staff cooperation, a negative effect of urban metro status on principal leadership, and no effect of school size on these effective schools variables.

Second Generation Extensions: Urban-Suburban Differences

Two studies explicitly explored differences in effective school conditions in public schools in urban and suburban contexts using large scale survey data. Purkey and Rutter (1987) compare

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[3] While this is no place for critique of the sector-effects work, it is important to note that remarkably limited evidence of sector effects on educational outcomes has generated enormous interest in this context variable of schooling.

the practices and beliefs of urban and suburban teachers using the HS&B data. Based on analysis of teacher reports, they conclude that students "encounter a less positive educational environment" and teaching "is a more difficult task" in urban schools than in suburban schools (1987, p388). More recently, an analysis by Witte and Walsh (1990) of data from the Milwaukee metropolitan area documents conditions that distinguish "two very separate educational worlds -- one in the city and one in the suburb" (1990, p. 192). Variables that distinguish schools -- such as student achievement and SES, parent involvement, and teacher control -- highly cluster by metro-status of the school. These papers call attention to the problems of aggregating qualitatively different kinds of schools and to the need for systematic attention to interaction effects involving metro-status.

Our study is designed to advance research on the "two worlds" notion of urban and suburban public schooling in two ways. First, using national survey data, we assess the applicability of models developed for urban schools to suburban schools, and vice-versa. Second, we broaden the range of context variables to include two sets of variables neglected in prior research: staff characteristics (that reflect differential recruitment and selection across schools) and the school's organizational environment.

Labor Differences. We focus on labor differences because we suspect some schools may have an advantage developing a productive school working environment as a consequence of the quality of staff they are able to attract and retain. For example, the characteristics (and size) of the pool of candidates available for positions in a school is likely to depend, at least in part, on the location of the school. A school in a crime ridden area, for example, is likely to have a considerably more difficult time recruiting qualified staff than a school in a middle class suburb. Differences in working conditions and working environments also suggest that salary levels do not mean the same thing in every setting. In particular, in some areas, higher salaries may largely

represent compensation for the non-pecuniary disadvantages of an unattractive work environment.[4]

Organizational Differences. Differences in the wider organizational environment in which a school resides may also affect the capacity of a school to develop effective school conditions. School level management, for example, is more constrained in districts, often urban districts, facing greater outside political pressure (Hannaway, 1990). A recent study by Friedkin and Necochea (1988) illustrates the possibly different effects of organizational contexts in different settings. They analyzed the effects of school system size on student performance separately for high and low SES school districts and found a strong negative effect among low SES school districts, but a positive effect in high SES districts. They suggest that district size may have very different implications for high and low SES districts. Larger size may imply a wider range of opportunities for students and staff in high SES communities; while in low SES communities, it may imply greater bureaucratic constraint and an impersonal environment.

Both because school settings are substantively different across metro areas and because local educational policies are being formulated within these different contexts, we take seriously the possibility that conclusions from effective schools research will be different for urban, suburban, and rural school settings. Our research is largely exploratory. We pursue the question of whether -- and in what ways -- context predictors of effective internal school conditions are the same across urban, suburban, and rural schools using survey data that allow us only gross indicators of some of the context variables of interest. Yet, even with this limitation, our findings show patterns of effects that are

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[4] By the same token, the lower wages paid by private schools apparently do not put them at a competitive disadvantage when hiring since they reflect wages that are adjusted for the non-pecuniary advantages of a favorable working environment. Wages that are adjusted for non-pecuniary advantages and disadvantages are referred to as "hedonic" wages. (See Chambers, 1981, for discussion.)

systematically associated with the urban, suburban, and rural location of the school. While the exploratory nature of our investigation cautions against considering the results conclusive, they do suggest specific promising areas for more refined analysis.

DATA AND METHODS

Our analysis focuses on two broad dimensions of internal school processes highlighted by the effective schools literature: strong principal leadership and teacher community. The leadership variable includes measures of the principal's effectiveness in establishing clear school goals, providing teachers support in instruction and innovation, and involving teachers in important educational decisions. The teacher community variable encompasses measures of teachers' effectiveness in maintaining high standards for their work, establishing a productive learning environment for students, and working cooperatively.

We analyze the relation of the principal leadership (PL) and teacher community (TC) variables to three categories of context variables: student composition, staff composition (principal or teacher characteristics, respectively, for analyses of PL and TC), and organization context. The organization variables included in the analyses are: school and district size, principal autonomy, teacher organization influence, and teacher salary resources.

Data for the study derive from the High School & Beyond (HS&B) national longitudinal program which began in 1980 in a representative sample of U.S. secondary schools.[5] The school

[5] The High School and Beyond (HS&B) program, sponsored by the National Center for Educational Statistics, U.S. Department of Education, is a national longitudinal study of individuals who were high school sophomores and seniors in 1980. In the 1980 base year, survey data and achievement data were collected from 30,030 high school sophomores and 28,240 high school seniors in 1015 schools. At two-year intervals, the same students have completed follow-up questionnaires. A school questionnaire was completed by the principal in the base year and in 1982. In 1984, the Administrator and Teacher Survey (ATS) was conducted for a 50% subsample of the HS&B schools (yielding a sample N of 457 participating schools). This survey was designed to obtain data on the internal workings of schools and included questionnaires for school principals, teachers (up to 30 per school) and guidance counselors (see Moles, 1988, for more information).

sample for our study is all public schools included in the ATS supplement survey conducted in 1984 that had over 50% response rates for sampled teachers (school N = 321). Four different HS&B data files were used to construct measures for the study: the 1982 student file, the 1982 school file, the ATS administrator file, and the ATS teacher file. In addition, we use district size data developed for the ATS school sample by Hannaway.

Measures

Effective Schools Variables. Our measures of principal leadership (PL) and teacher community (TC) both derive from teacher reports on their school's internal working relationships. They are "aggregate" measures based on the combined responses of teachers in each school to a set of items on the ATS teacher questionnaire.

Principal components analysis of school means for all items relevant to a school's site administrative conditions (34 items total) or teacher community (24 items total), respectively, was used to identify subsets of items for our measures of PL and TC. The items used to construct each index were those that weighed heavily (weights greater than .70) on the first component. We used principal components analysis, rather than a factor analytic technique, in order to obtain the best summary of between-school variance on a global measure of each effective schools variable.[6] The analyses yielded a principal leadership index of 15 items and a teacher community index combining 7 items. (See Appendix 1 for a list of these items, their wordings and their weights on the first principal component.)

[6] The difference between these techniques empirically is that the principal components technique analyzes the total variance in the data, while factor analysis considers only variance shared by items. If one assumes that more than one theoretical variable describes the relationships among items, then factor analysis would be the preferred technique for index construction. In contrast, we have assumed that between-school variance on any of the items refers to a general school condition (teacher community or principal leadership), and we used principal components analysis to determine which items best represent the construct. (See Dillon and Goldstein, 1984:23-106; Kim and Mueller, 1978 for further discussion.)

Student Composition Variables. Three measures of student composition were used for this study: average SES of students in the school, proportion of minority students, and average student score on combined HS&B tests. The SES and test measures were developed from the 1982 student file, taking averages on the individual measures for all HS&B students in a school. The measure of percent minority students derives from the 1984 ATS administrator file and combines Black, Hispanic, and Asian students. Given very high correlations of the SES and HS&B test score measures (.8) and the higher correlation of SES measures with effective schools variables, we include only the SES and minority composition variables in the analyses reported in this paper.

Labor Force Characteristics. The ATS data provide very limited opportunities to develop measures of staff characteristics that would indicate schools' differential ability to attract principals or teachers most able to achieve productive working relations. Ideally, we would want to know principals' prior administrative success and teachers' attitudes, interpersonal skills, and teaching success before coming to the school. However, such information is difficult to obtain through a survey and is not available in any form in the HS&B data. We thus have used crude proxies of principal and teacher characteristics that might support development of effective internal processes within a school.

The measures of teacher characteristics used in this study are: teachers' education (average years), teachers' salary[7] (school median), the proportion of the staff who are newcomers (% less than 3 years in school), gender composition (percent women), and principal ratings of the quality of the teaching staff (% rated good or excellent). The first two measures derive from the ATS teacher file; the latter three are from the ATS principal file.

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[7] Teacher salary could reasonably be interpreted as either a labor force characteristic or an indicator of organizational resources. We include it here as a labor force characteristic, but discuss later the implications of its possible relation to organizational factors.

Measures of principal characteristics are: years of administrative experience, whether the principal was new to his/her current position (coded 1 if new), present salary, and gender (coded 1 if female). Each of these measures derives from the ATS administrator file.

Rationale for including these variables is apparent for all but the gender variables. Our consideration of the gender composition of high school staffs is based on research evidence that women, by virtue of their socialization, tend to be more concerned with and skilled in supportive interpersonal relations and thus may bring aptitudes to their teaching jobs that engender collegial relations included in our definition of teacher community. This consideration is further suggested by Rowan, Raudenbush and Kang's (1988) finding that gender predicts within-school variance on school climate measures (females showing higher scores).

Organizational Context. We have developed four measures to describe the organizational context of high schools in this study. They are school size (student enrollment grades 9-12), district size (total district enrollment), principal autonomy (vis-a-vis the superintendent), and influence of a teachers' union.

The measure of principal autonomy derives from an item on the ATS administrator questionnaire that asks respondents to rate the influence of principal, superintendent, school board, teachers, parents, and teachers' organizations over a range of decisions. Our measure is the ratio of total influence ratings reported for the principal across six decision domains to the total ratings given superintendent and school board combined. This measure captures school site administrative autonomy vis-a-vis LEA authority and may affect capacity to develop site-level leadership. The measure of teacher organization influence is based on the same administrator question and is the total of influence ratings across decision domains. Again, this variable may represent constraints

on principal leadership and/or teacher collaboration beyond contract boundaries.

Analyses

We divided the national public school sample into subsamples of urban, suburban, and rural schools. The metro status designation in the HS&B data base, "SCHURB," was used as the criterion for defining the subsamples. Subsample Ns are 83, 142, and 96 for urban, suburban, and rural schools, respectively.

We report two kinds of subsample analyses in this paper. First, we compare means and standard deviations on variables of interest in this study. This descriptive analysis allows us to assess differences and similarities between urban, suburban and rural schools on both effective schools variables and on the context variables under analysis. The comparisons are important for evaluating the advisability of developing separate models. Are effective school variable means and standard deviations comparable across the subsamples? Do they establish limits on any findings of the subsample analyses, e.g., within what ranges is a size effect observed?

Second, we estimate models of context effects on PL and TC separately for the urban, suburban, and rural school subsamples. For each subsample, we use OLS regression techniques to estimate two models each for PL and for TC. Model I includes labor force characteristics (principal characteristics in the model for PL and teacher characteristics for the model for TC) and student composition (SES) as a control variable; Model II includes organization context variables along with student composition (SES). Unstandardized regression coefficients are reported to allow comparisons across dissimilar populations; standardized coefficients are reported in parentheses to allow comparison of effects within the school populations. We do not report the results of a model that includes both labor force characteristics and organizational factors because these sets of factors are highly correlated with each other thereby creating problems of

multicollinearity that make interpretation of the results problematic. The strong relationships among these independent variables, however, have important theoretical and policy implications which we discuss later.

Finally, we aggregate the school subsamples in order to test statistically for interaction effects suggested by any differences in results obtained for urban, suburban, and rural subsamples. For these tests, we specify interaction terms representing subsample differences in effects of particular context variables and include these, along with metro status dummy variables for Model I (labor market characteristics) and for Model II (organization characteristics). For this analysis, ATS school weights are used to approximate a national sample of high schools. This final stage of analysis provides a statistical assessment of whether or not results of our subsample analyses do, indeed, challenge the use of a general, aggregate model of context effects on effective schools variables.

FINDINGS

Urban, Suburban and Rural Differences

Despite substantial differences in their social, political and organizational settings, urban, suburban and rural schools show comparable means on the effective schools variables of interest in this paper.[8] (See Table 1). Variation among schools within each subsample is also comparable, with slightly greater variance on teachers' community among urban schools and on principal leadership among rural schools.

[TABLE 1 ABOUT HERE]

[8] The national survey data thus do not substantiate Witte and Walsh's finding for their Milwaukee area sample data that teachers in suburban schools perceived their school environments in more positive terms than their urban school counterparts (1990, p.193)

These observations have both substantive and methodological significance. Substantively, the data suggest that collegial support and principal leadership, insofar as it they are resource for the educational success of teachers and schools, are fairly equally distributed across schools in the three sectors. On average, teachers in urban schools -- with highly complex social and organizational environments -- rate their professional working relationships similarly to teachers in suburban and rural settings. Methodologically, the data indicate that separate analyses for the school subsamples is warranted. If subsample standard deviations on the dependent variables of this study, TC and PL, were significantly different, we would need to address technical problems of analyzing non-comparable ranges of variation.

Subsample differences shown in Table 1 highlight the claim that urban, suburban, and rural schools are qualitatively different kinds of school systems. Note, for example, the size of the district in which the average urban, suburban, and rural school resides. Urban schools operate in districts that, on average, are more than 8 times the size of the average suburban school's district and about 45 times the size of the average rural school's district! Urban principals also report having about 7 times less autonomy in matters of school policy, resource allocation, and personnel decisions than their average suburban counterpart and about 4 times less than the average rural principal. The average size of urban and suburban schools is about the same (1689 and 1457 students, respectively), while the average rural school is less than half the size. The average unadjusted salaries for teachers and principals is about the same for urban and suburban schools, but substantially lower for rural schools. Teacher organization influence is comparable, on average, in suburban and rural school systems but both greater and more variable among urban school systems.

We also see more clearly the kind of metro-status difference in socio-economic environment described earlier: Urban schools show

a substantially lower range on student SES backgrounds than suburban schools.

Contrary to our expectations, patterns for labor force characteristics between and within metro areas are very similar across subsamples. Urban and suburban high school faculties have similar levels of education and years of teaching experience; and the representation of women among their school faculties are nearly identical, about forty-seven percent. Principals in all three groups also rate about three-quarters of their teaching staff as 'good' or 'excellent'.[9] Although the means are similar, we might expect to see different effects among the three sets of schools. Specifically, it could be that technical support from colleagues is a more important foundation of teacher community in urban schools, because urban teaching jobs are more difficult and demoralization more likely in the absence of high colleague standards.

Finally, urban school principals are somewhat more experienced administrators, on average, than their suburban and rural counterparts; but differences are not substantial. The overwhelming majority of high school principals in each metro area are male, though variation is greatest among suburban schools and lowest among rural schools. Average salary levels for urban and suburban principals are about the same, although there is more variation shown for suburban principals. Salary levels for rural school principals are considerably lower.

Models of Context Effects on Effective School Variables

Regression estimates for equations predicting teacher community (TC) and principal leadership (PL) are shown in Tables 2A and 3A and Table 2B and 3B, respectively. As noted, each set of context

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[9] The absence of differences on these measures could mean either that there are no significant labor force differences among urban, suburban, and rural schools or that the measures we have are poor indicators of faculty quality. (Principals' perceptions could be biased, for example, because of cognitive dissonance or because the standards of teacher excellence differ between urban, suburban, and rural contexts.)

variables -- labor force characteristics and organizational variables -- is regressed separately on TC and PL. For each model, results are reported for urban (U), suburban (S), and rural (R) school subsamples. We first discuss the effects of labor force characteristics on our dependent variables and then the effects of the organizational variables.

Labor Force Characteristics. Our analyses of teacher community and principal leadership reveal distinct patterns with regard to labor force characteristics for urban schools and suburban schools.[10] One intriguing difference is that the gender composition of the teaching staff and the gender of the principal show significant effects on teacher community and principal leadership among suburban schools, but not among urban schools.

[INSERT TABLES 2A AND 3A ABOUT HERE.]

Among suburban schools, staffs in which females are more highly represented report better professional working climates; the same result does not appear in the urban schools sample. We earlier suggested that women's gender socialization might promote greater interest and skill in establishing supportive collegial relations (or to kinder evaluations of colleagues and principals). But, if this accounts for the gender composition effect among suburban high schools, why doesn't it show up for urban schools?

We suspect that the finding derives from distinct labor market boundaries and dynamics affecting teacher recruitment to urban and suburban high schools, though we have no data to test our speculations. A number of arguments are plausible. It may be that suburban systems that attract and hire relatively high proportions of women teachers are particularly desirable workplaces and thus

[10] Findings for rural schools indicate that our labor force model and our organization context model are essentially useless for explaining variation in rural schools' professional climates. We present results for this subsample so that the reader will have complete data for the national sample. However, our discussion of findings focuses on observed differences in the model estimates obtained for urban and suburban school subsamples.

that the measure '% female' serves as an indicator of workplace quality for suburban schools. (This could result from women in the suburban teacher labor force weighing professional climate more heavily that men in their choice of jobs and/or from employers' preferences for women applicants to desirable suburban teaching jobs. Or it may be that some kinds of suburban high schools can attract a labor pool of women teachers who, for whatever reasons, are particularly successful at forging good professional relationships in the school. (This suggests the possibility of distinct types of suburban labor markets.)

A similar urban-suburban difference in the significance of gender is shown by the results for principal leadership. Among suburban schools, women principals receive higher leadership ratings; this suggests, as earlier findings did for teachers, that suburban women's professional careers in education may be different from those of their urban and rural counterparts.

Salary effects also are significantly different for urban and suburban school subsamples. In regression analyses of both TC and PL for the urban subsample, the salary variable (teachers' salary in TC and principal's salary in PL) is a negative and statistically significant predictor. Among suburban schools, salary is not a predictor of either TC and PL.

Why the negative effect for urban schools of teacher and principal salary on productive workplace conditions? How should we interpret this finding? One possibility is that higher urban salaries signal a syndrome of organizational conditions that undermine a positive school climate and are not controlled for by SES in our models.[11] In other words, salaries may be a better proxy for unmeasured social, political, and organizational context conditions of the school than of professional competence as we had

[11] Indeed, as part of his America 2000 strategy, President Bush "encouraged states to consider differential pay and financial and other awards for those who.... teach in challenging settings..." (1991, p. 50). We suspect that such practices have evolved in order to staff our nation's toughest urban schools but not enough to attract the best of the teaching labor force.

initially posited. The pattern of correlations within the urban subsample and suburban subsample gives some support to this view. In urban areas, teacher and principal salaries are associated with organizational characteristics included in this tudy, specifically district and school size and teacher union influence, but r with the SES characteristics of the clients. The suburban resu .s show a different picture: the strongest correlate of principal and teacher salaries is SES.[12]

A third labor force characteristic that shows different effects across subsamples is quality of teaching staff, as rated by the principal. Among urban schools, it is a positive and statistically significant predictor of teacher community, but not in suburban (or rural) school subsamples. Because our measure is based on principals' ratings and not objective characteristics of the teaching staff, it is difficult to interpret this result. But one possibility is that urban schools may be more dependent on high quality teachers to set the professional tone in the school. In suburban areas, other actors, probably to a large extent parents, and more generally a community ethos that places a high value on education, may provide a climate that supports professional relationships within schools. As suggested earlier, urban school faculties may depend much more on one another's expertise and collegial support for their success in the classroom and for their perception of good professional relationships in the school.

An unexpected finding is that 'new principal', our dummy variable indicating principals in the first year of their current position, shows different effects across the school subsamples. We included this as a control variable because we expected that it would probably take a new principal at least a year in the position before establishing a reputation among the staff for being an effective leader. In the PL regression for the urban (and rural) schools, however, the existence of a new principal shows a

[12] It appears that teachers who work in what many would consider to be the most privileged work settings -- suburban areas with the highest SES and student academic performance -- are also paid the most.

significant positive effect on the leadership rating of the principal. It shows no effect, one way or the other, in the suburban subsample.

We can only speculate about reasons why urban, but not suburban, schools show a gain in professional climate measures when they have new principals. One possibility is that the ratings represent a simple "honeymoon" effect -- the new principal raising teachers' expectations for a new and better era. Because suburban schools, on average, are generally operating with fewer salient problems than urban schools, suburban teachers may feel less need for the hope a new leader might generate. Alternatively, the individuals currently being recruited for principalships in urban schools may, indeed, be superstars or at least superior to their older counterparts. Yet a third possibility is that urban principal vacancies open more frequently in schools with relatively strong professional cultures and the relationship is entirely spurious. Clearly, further research is needed before any policy implications can be drawn from this research finding.

In each of the models, we included a student composite SES measure as a control variable. It is interesting that this variable proved to be a significant predictor of teacher community in the suburban subsample, but not in the urban subsample. To be more precise: in the SES range represented within the suburban subsample, SES produces significant variation in teacher community. Within the range represented within the urban subsample, the same effect does not hold.

We tested for the statistical significance of the differences the subsample analyses yielded by expressing the differences as interaction terms in an aggregate model. That is, we analyzed the data from urban, suburban, and rural schools together and included dummy variables for metro status and interaction terms along with the predictors used in the subsample analyses. The interaction terms based on differences in labor force characteristics for the TC model were: Sub*SES; Sub*Gender; Sub*Salary, and Urb*Quality.

For the PL model, they were: Sub*SES; Sub*Gender; Sub*Salary, and Sub*New Principal. In both models, the dummy variables for Urban and Suburban showed significant independent effects. In the regression for TC, all four interaction terms were significant; and in the regression for PL, two of the four interaction terms -- Sub*Gender and Sub*Salary -- had significant independent effects. (See the last two columns of Table 2A and Table 2B for these results.)

Organizational Context Characteristics. Again, we find differences in the urban and suburban subsamples.[13] In urban areas, school size, district size, and the influence of the teachers union all show negative effects on at least one of the effective school conditions we examined. In suburban areas, size generally appears to have the opposite effect: larger size, in particular district size, appears to promote effective school conditions. The influence of teachers' unions shows negative effects for suburban schools similar to the findings for urban schools.

(INSERT TABLES 3A AND 3B ABOUT HERE.)

The district size effect is the most dramatic difference between the urban and suburban results. Its effect is negative among urban schools and positive and strong within the suburban school subsample. Because of the different district size ranges in suburban and urban areas (Table 1), we examined the possibility of non-linearities, but it does not appear to be an alternative explanation for the divergent results. That is, when we considered only those urban and suburban schools that fall within the same size range (excluding the largest and the smallest), the zero-order correlation between district size and teacher community is still negative among urban schools and positive (.21, $p<.10$) among

[13] As noted earlier, the model shows no explanatory value for the rural subsample, and our discussion concentrates on the effects shown for urban and suburban school subsamples.

suburban schools. District size and school size are highly correlated in both sets of schools (.33 and .35) and, therefore, disentangling their effects is somewhat problematic.[14]

A plausible interpretations of this difference in effect of district size is that large urban school districts have generated bureaucratic controls on teachers' work that inhibit the development of productive professional relationships. Another possibility is that district size is a proxy for social pathologies associated with larger urban areas that may dampen teacher collegiality and capacity for principal success.

Finally, results for the union influence variable are also somewhat conditional on a school's metro status. While both urban and suburban school subsamples show a weak negative effect of teacher union influence on teacher community, a (stronger) negative effect of this variable on principal leadership is shown only among urban schools. The most straightforward explanation of this finding is that unions are stronger in urban areas and the stronger the union the greater the range of issues encompassed in negotiations. Because negotiations for both economic and educational issues typically take place at the district level and because unions today, and more so the stronger unions, include in their negotiations areas previously decided at the school level (McDonnell and Pascal, 1979), they constrain school-level leadership. Two alternative explanations for this finding, however, cannot be ruled out with available data. One is that union influence may increase in a school with unfavorable management conditions; a second is that weak principals may perceive or report constraints from teachers unions as an account of poor relations with teachers. We should note, however, that our data are from 1984 and there are signs that the relationship

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[14] The multi-collinearity problem pertains especially to urban schools, since school size is uncorrelated with TC and PL among suburban schools and thus does not compete with district size in the models. Among urban schools, the correlations are: district size with TC = -.31, with PL = -.19; school size with TC = -.29; with PL = -.25. (For suburban schools, the correlations are: district size with TC = +.22, with PL = +.27; school size is uncorrelated with both TC and PL.

between unions and schools is undergoing some redefinition. Regardless of these changes, our findings point to the union-school relationship as an important context for professional relationships in urban schools. No doubt, the extent and nature of teacher union influence will be key factors in the success of change efforts among urban, and perhaps to a less extent among suburban, high schools.

Again, to provide statistical tests of observed differences in regression results for urban and suburban subsamples, we estimated effects of interaction variables using an aggregated school sample. Results of these tests are shown in the last columns of Tables 3A and 3B. While the interaction effects involving size were all statistically significant, the results for teacher organization influence indicate that a main effects model is sufficient; in other words, negative effects for urban schools are not significantly greater than for suburban schools. Empirical questions raised above about the negative effect of teacher unions on school professional relations should thus be posed in future research in suburban, as well as urban, school settings.

SUMMARY AND DISCUSSION

This study extends a long line of research on factors that promote or undermine desirable school conditions and educational outcomes. While the substantive findings of our exploratory analysis do not warrant causal inferences, the data suggest important new directions for research on factors that influence school effectiveness. These new directions are dictated, on one hand, by norms of responsible social science and, on the other hand, by research needs of local leaders responsible to achieve **America 2000** goals.

First, our data point to the need for more "tailor-made" studies -- research on school effectiveness that recognizes the vastly different social and organizational contexts within which U.S. schools operate. We show how national survey data sets can be partitioned to yield subsamples of "comparable" schools; and we provide further empirical support for the view that urban and suburban schools operate in two different "worlds" (Witte and Walsh, 1990). By showing that plausible models of context effects on productive professional relations within high schools yield significantly different estimates for urban and suburban school samples, the study challenges an assumption implicit in most survey research and in its consumption by policymakers. Namely, our findings suggest that inferences based on broad, inclusive samples of schools are neither valid nor useful for the very different <u>kinds</u> of educational systems they embrace.

Those who conduct and consume educational policy research need to develop more sophisticated notions about qualitative differences among schools and local school systems that warrant systematic attention and separate analyses. While our data warrant systematic attention to urban/suburban differences in organizational policy research, this is only one kind of "cut" on the world of educational research and educational policy. Local policy makers should always have an eye on the problem of "fit" of research findings to their particular situation. For example, local actors

should be concerned about what findings on mathematics instruction show for, say, children in different achievement ranges.

Second, the study calls for a broader scope of analysis in this line of research. While earlier studies asked how a school's characteristics and various internal arrangements affect its relative success, we argue for more serious attention to context variables that affect the capacity of a school to establish productive teaching and learning conditions. Our study points in two directions: toward labor market processes that differentially allocate teacher and administrator aptitudes among public schools and toward organizational and political conditions of the local systems in which schools operate.

Attention to labor force characteristics may be especially important for understanding school variation in professional climates, but it has much broader and untapped potential for expanding our knowledge of educational productivity. In fact, given researchers' enormous investments in techniques to control for student selection in assessing school effects on learning outcomes, it is astounding how little attention has been paid to faculty selection effects. The differential capacity of schools to recruit and retain talented and committed teachers has simply been ignored as a public policy issue up until **America 2000**. The official mention of differential incentives to teachers who teach in "dangerous and challenging settings" demands systematic research on the operation of local teacher labor markets. How unequal is the distribution of local teaching talent in urban areas in general, in a particular local system? What kinds of incentives can promote more equitable and productive utilization of professional resources in U.S. school systems?

Third, substantive findings from this exploratory study suggest problems for further comparative research on the "two worlds" of public education, as well as for the "tailor-made" studies needed to formulate sensible local policy within urban or within suburban settings. Speculations throughout the findings

section represent hypotheses and counter-hypotheses for both kinds of research.

An important line of comparative research would address the issue of how bounded vs. permeable are urban and suburban teacher labor markets and how similar or different are processes and outcomes of teacher selection and recruitment within them. Our data on urban-suburban differences in the effects of both salary and gender on professional working relations in high schools point to two important variables for subsequent research. How do salary differences among jobs/schools within and between labor markets map onto differences in job demands and nonsalary rewards and differences in teacher quality? Are there segmented labor markets and professional labor pools between and/or within urban and suburban school systems that relate to gender differences in work opportunities and preferences? Findings from this line of work will deepen our understanding of the "two worlds" of urban and suburban systems, schools and jobs. Most important, they will help local leaders in the new education strategy to take a broader, metropolitan area view of school improvement and to establish sensible policy on differential teacher pay.

The kinds of "tailor-made" research our study calls for will, minimally, collect and analyze data for schools in comparable organizational and policy contexts. More refined definitions of common contexts than "urban" and "suburban" might reference the size of the metropolitan area in which an urban or suburban school resides. Our data urge suburban school policy analysts to attend carefully to client socio-economic status, which appears a significant predictor of professional working conditions among suburban but not urban schools. We need a better sense of whether, and how, more and less affluent suburban districts in a metropolitan area compete for talented and committed professionals, how gender plays out in these labor markets, and how relatively affluent communities establish better school environments for their children.

Urban school policy analysts, on the other hand, would better invest their research efforts in disentangling the confounded effects of school organization dimensions (unpacking the notion of "bureaucratization"), educational and broader urban politics, and social-economic conditions in the community. Policy issues in urban areas concern the relative educational payoffs of various organizational, political, and social services reforms. Thus far, the new generation of survey research on school effectiveness has failed to inform these hard choices.

The new era of educational reform calls for educational policy research focused on choices within the fixed parameters and existing conditions of local school contexts. While many will see renewed localism as the death knell for survey research on school effectiveness, we see promise in the kinds of contextualized research strategies and problems we have illustrated and suggested in this paper. Policymakers will need to contribute to defining the kinds of metropolitan areas, educational systems, and schools that constitute sensible reference groups for one another and, thus, meaningful populations for effective schools research. Clearly, they should be leery of information on "what works," on average, across radically different social, organization, and political contexts of U.S. education. As illustrated by our findings on district size effects on productive school climate, what works in one kind of educational setting may actually hurt in another.

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TABLE 1

Means and Standard Deviations of Research Variables for Urban, Suburban, and Rural School Samples

	Urban (N=72-83)	Suburban (N=126-142)	Rural (79-96)
Effective Schools Variables			
Teacher community	26.4	27.2	26.7
	(3.2)	(2.9)	(2.9)
Principal leadership	58.1	58.1	56.5
	(7.1)	(7.4)	(8.7)
Student Composition			
SES index (average)	-.27	.09	-.19
	(.37)	(.40)	(.31)
Teacher Labor Force Variables			
Subject preparation (courses)	6.0	5.9	5.8
	(.5)	(.5)	(.5)
Newcomers (< 3 years in school)	11.6	11.9	17.3
	(9.3)	(11.9)	(16.9)
Quality (% principal rates as good or excellent)	74.1	76.9	74.2
	(15.4)	(15.0)	(15.1)
Gender (% women)	47.3	47.0	46.2
	(11.7)	(11.1)	(13.7)
Salary (median)	21748	21931	18899
	(2769)	(3249)	(2614)
School Administrator Characteristics			
Experience (years, principal)	11.8	10.5	9.7
	(7.1)	(6.8)	(7.3)
Gender (F=1, M=0)	.05	.08	.03
	(.22)	(.28)	(.18)
Salary	43460	42909	33690
	(5736)	(7924)	(6901)
New principal (1=first year in school; 0=other)	.16	.14	.16
	(.37)	(.35)	(.37)
Organization Variables			
School size	1689	1.57	724
	(728)	(765)	(467)
District size	168312	19064	3731
	(265491)	(27879)	(3973)
Principal autonomy index	-.49	2.95	1.59
	(6.51)	(6.11)	(5.49)
Teacher organization influence index	14.9	12.9	12.3
	(6.8)	(5.8)	(5.9)

TABLE 2. Effective Schools Variables as a Function of Labor Force Characteristics in Urban, Suburban, and Rural School Samples:

A. TEACHER COMMUNITY

VARIABLES	O-ORDER CORRELATIONS URBAN	SUBURBAN	RURAL	REGRESSION MODELS URBAN	SUBURBAN	RURAL	INTERACTION TESTS ALL SCHOOLS I	II
STUDENT COMPOSITION								
(SES)	.03	.27**	.01	-1.14 (-.13)	1.59** (.24)	-.78 (-.08)	1.05** (.14)	-.68 (-.09)
TEACHER LABOR FORCE								
SUBJECT PREPARATION	.02	.19**	-.17	.38 (.05)	.15 (.03)	-.60 (-.12)	-.13 (-.02)	.00 (.00)
NEWCOMERS (<3 yrs.)	-.11	.08	.13	-.03 (-.10)	.02 (.09)	.01 (.07)	.01 (.04)	.01 (.05)
QUALITY(% good,excellent)	.25**	.08	-.11	.06** (.28)	.02 (.09)	-.03 (-.19)	.02 (.09)	.00 (.00)
GENDER (% F)	.17	.26**	.07	-.01 (-.02)	.05** (.21)	-.01 (-.05)	.03** (.13)	-.01 (-.02)
SALARY(median, in $1000's)	-.32**	.06	-.24**	-.45** (-.39)	.02 (.02)	-.18 (-.14)	-.13* (-.14)	-.34** (-.37)
METRO STATUS								
URBAN							.37 (.06)	-3.69* (-.58)
SUBURBAN							.48 (.08)	-9.33** (-1.62)
INTERACTION TERMS								
SUB x SES								2.42** (.23)
SUB x GENDER								.06* (.49)
SUB x SALARY								.37** (1.43)
URB x QUALITY								.06** (.74)
Intercept				30.17	21.60	36.16	27.15	33.88
R^2 (Adjusted)				.17**	.09**	.01	.03**	.10**
N				74	119	73	268	268

* P≤.10 ≥ .05
** P≤ .05

[a]Unstandardized regression coefficients are reported, with standardized coefficients shown in parentheses.

TABLE 2. (cont.)

B. PRINCIPAL LEADERSHIP

VARIABLES	O-ORDER CORRELATIONS URBAN	SUBURBAN	RURAL	REGRESSION MODELS URBAN	SUBURBAN	RURAL	INTERACTION TESTS ALL SCHOOLS I	II
STUDENT COMPOSITION								
(SES)	.07	.08	-.13	.46	2.50	-.21	1.57	.55
				(.03)	(.14)	(-.01)	(.08)	(.08)
ADMINISTRATIVE CHARACTERISTICS								
EXPERIENCE (yrs. principal)	.07	-.07	-.17	.09	-.03	-.05	.01	.01
				(.10)	(-.03)	(-.04)	(.01)	(.01)
GENDER (F=1, M=0)	-.10	.09	.18	-2.90	4.71*	-10.53**	-.06	-6.93**
				(-.08)	(.17)	(-.22)	(.00)	(-.21)
SALARY(in $1000's)	-.34**	.05	-.27**	-.51**	-.03	-.32**	-.21**	-.41**
				(-.43)	(-.03)	(-.26)	(-.22)	(-.45)
NEW PRINCIPAL (yes=1)	.13	.11	.21**	4.28**	.80	4.87**	3.06**	4.73**
				(.23)	(.04)	(.21)	(.15)	(.22)
METRO STATUS								
URBAN							3.99**	5.97**
							(.23)	(.35)
SUBURBAN							2.78	-11.20**
							(.18)	(-.73)
INTERACTION TERMS								
SUB x SES								1.92
								(.07)
SUB x GENDER								11.69**
								(.28)
SUB x SALARY								.37**
								(1.07)
SUB x NEW PRINCIPAL								-3.66
								(-.12)
Intercept				79.52	59.06	67.72	63.52	70.14
R^2 (Adjusted)				.16**	.00	.11**	.03**	.09**
N				75	126	89	292	292

* P≤.10 ≥ .05
** P≤ .05

[a]Unstandardized regression coefficients are reported, witn standardized coefficients shown in parentheses.

TABLE 3. Effective Schools Variables as a Function of Organizational Context Conditions in Urban, Suburban and Rural School Samples:

A. TEACHER COMMUNITY

VARIABLES	O-ORDER CORRELATIONS URBAN	SUBURBAN	RURAL	REGRESSION MODELS URBAN	SUBURBAN	RURAL	INTERACTION TESTS ALL SCHOOLS I	ALL SCHOOLS II
STUDENT COMPOSITION								
(SES)	.03	.27**	.01	.26	1.74**	.06	1.29**	.26
				(.03)	(.25)	(.01)	(.18)	(.04)
ORGANIZATION VARIABLES								
SCHOOL SIZE (in 100's)	-.29**	.05	-.11	-.11**	-.02	-.05	-.04	-.01
				(-.25)	(-.05)	(-.09)	(-.12)	(-.04)
DISTRICT SIZE (log)	-.31**	.22**	-.10	-.45	.57**	-.03	.13	-.30
				(-.21)	(.26)	(-.01)	(.08)	(-.19)
PRINCIPAL AUTONOMY INDEX	-.02	.02	-.04	-.07	-.01	-.02	-.03	-.03
				(-.15)	(-.02)	(-.04)	(-.07)	(-.06)
TEACHER ORGANIZATION INFLUENCE INDEX	-.15	-.08	-.10	-.09	-.10**	-.06	-.09**	-.09**
				(-.18)	(-.20)	(-.13)	(-.19)	(-.19)
METRO STATUS								
URBAN							-.03	2.76**
							(-.01)	(.42)
SUBURBAN							-.14	-7.33**
							(-.03)	(1.31)
INTERACTION TERMS								
SUB x SES								1.50
								(.14)
URB x SCHOOL SIZE								-.10*
								(-.30)
SUB x DISTRICT SIZE								.85**
								(1.38)
Intercept				34.84	23.22	28.45	27.66	30.59
R^2 (Adjusted)				.12**	.12**	.00	.04**	.09**
N				60	115	70	247	247

* P≤.10 ≥ .05
** P≤ .05

[a]Unstandardized regession coefficients are reported, with standardized coefficients shown in parentheses.

TABLE 3. (cont.)

B. PRINCIPAL LEADERSHIP

VARIABLES	O-ORDER CORRELATIONS URBAN	SUBURBAN	RURAL	REGRESSION MODELS URBAN	SUBURBAN	RURAL	INTERACTION TESTS ALL SCHOOLS I	II
STUDENT COMPOSITION								
(SES)	.07	.08	-.13	.75 (.04)	.68 (.04)	-1.71 (-.06)	.69 (.04)	.15 (.01)
ORGANIZATION VARIABLES								
SCHOOL SIZE (in 100's)	-.25**	.11	-.17	-.25** (-.25)	-.05 (-.05)	-.46 (-.24)	-.07 (-.12)	-.33** (-.34)
DISTRICT SIZE (log)	-.19*	.27**	-.03	-.27 (-.05)	1.59** (.27)	1.21 (.17)	.72* (.17)	1.35** (.31)
PRINCIPAL AUTONOMY INDEX	.07	.10	.01	-.10 (-.09)	.13 (.11)	.04 (.02)	.03 (.02)	.04 (.03)
TEACHER ORGANIZATION INFLUENCE INDEX	-.30**	.00	-.05	-.36** (-.34)	-.08 (-.06)	-.13 (-.09)	-.19** (-.15)	-.12 (.09)
METRO STATUS								
URBAN							.07 (.00)	20.49** (1.17)
SUBURBAN							-.33 (-.02)	-4.85** (-.32)
INTERACTION TERMS								
SUB x SCHOOL SIZE								.40** (.46)
URB x DISTRICT SIZE								-1.51* (-.96)
URB x TEACHER ORG. INFLUENCE								-.23 (-.23)
Intercept				71.26	42.99	52.57	54.59	50.71
R^2 (Adjusted)				.11**	.06**	.00	.00	.05**
N				60	115	70	247	247

* P≤.10 ≥ .05
** P≤ .05

[a]Unstandardized regression coefficients are reported, with standardized coefficients shown in parentheses.

APPENDIX. MEASURES OF SCHOOL ORGANIZATIONAL VARIABLES

I. Effective Schools Variables

Teacher Community: Index constructed from the following items (listed by ATS Teacher Questionnaire item number). Each item is a Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree); as noted, items 19b and 19a were reverse coded).

19x. Teachers in this school are continually learning and seeking new ideas

19dd. There is a great deal of cooperative effort among staff members

19ee. Staff members maintain high standards of performance for themselves

19b. Staff members in this school generally don't have much school spirit (reverse)

19d. You can count on staff members to help out anywhere, anytime - even though it may not be part of their official assignment

19a. The learning environment in this school is not conducive to school achievement for most students (reverse)

19gg. This school seems like a big happy family; everyone is so close and cordial

Principal Leadership: Index constructed from the following, Likert-scale items from the ATS Teacher Questionnaire

19w. The school administration's behavior toward the staff is supportive and encouraging

19r. The principal knows what kind of school he/she wants and has communicated it to the staff

19hh. The principal lets staff members know what is expected of them

19i. The principal does a poor job of getting resources for this school (reverse)

19j. The principal deals effectively with pressures outside the school that might interfere with my teaching

19bb. In this school the teachers and administration are in close agreement on school discipline policy

19s. This school's administration knows the problems faced by the staff

19k. The principal sets priorities, makes plans and sees that they are carried out

19jj. The principal is interested in innovation and new ideas

3a. To what extent has each of the following helped you improve your teaching or solve an instructional or class management problem? a. Principal or school head

19q. Staff are involved in making decisions that affect them

19y. The principal seldom consults with staff members before he/she makes decisions that affect us (reverse)

19o. Staff members are recognized for a job well done

19t. In this school I am encouraged to experiment with my teaching

19m. Goals and priorities for the school are clear

II. Organizational Context Variables

School Size - Total student enrollment at 9-12 grade level (Source: Principal's Questionnaire, ATS survey)

District Size - Total student enrollment of the school district (Source: QED data)

Principal Autonomy - The sum of the superintendent influence scores over six decision making areas subtracted from the sum of principal influence scores over the same decision making areas: curriculum, instructional methods, allocating school funds, hiring teachers, dismissing or transferring teachers and setting disciplinary policy. (Source: Principal Questionnaire, ATS survey)

Teacher Organization Influence - The sum of the teacher organization influence scores over the following decision making areas: curriculum, instructional methods, allocating school funds, hiring teachers, dismissing or transferring teachers and setting disciplinary policy. (Source: Principal Questionnaire, ATS survey)