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ABSTRACT

The purpose of this study was to test the hypotheses that schools with more participative processes and less structure have higher levels of perceived organizational effectiveness, teacher job satisfaction, and student achievement than schools with less participative climates and more structure. A sample of 114 school units and 1,632 teachers participated by completing questionnaires and by furnishing achievement scores. The data were collected by the research team. The results of the multiple stepwise regression analysis procedures provided partial support for the hypotheses. (Author)

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BUREAUCRATIC STRUCTURE, ORGANIZATIONAL PROCESSES, AND THREE DIMENSIONS OF SCHOOL EFFECTIVENESS

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Based primarily on experience, folklore, and common sense, educators know that a variety of indigenous situational factors within schools make potent, little-understood impacts on the performance of students, teachers, and administrators. Yet direct empirical evidence is scant and contradictory. Even the relatively simple univariate relationships are not well understood, while the interactive relationships that produce heightened effects remain, at best, speculative. One explanation for this knowledge gap is the lack of efficacious measurement tools. Another is the apparent reluctance of researchers in educational administration to include effectiveness criteria in their studies (Miskel, 1976). A third reason might be that several studies and literature reviews--for example, Coleman, et al. (1966), Jencks (1972), Mosteller and Moynihan (1972), and Shea (1976)--suggest that achievement is explained primarily by variables outside of the school.

Regardless of the reasons, the school assumes a primary responsibility for its effectiveness level. Such explanations as those above are of little practical value because they do not provide educational decision makers with the information necessary to affect educational outcomes. Therefore, investigations describing the complex relationships among the schools' situational components and their effectiveness levels should yield valuable findings and also could spur additional studies in this important, neglected

area. Ratsoy (1973) supports this contention when he asserts that administrators and others might consider the most important concern to be the relationship, if any, between school structure and effectiveness. For these reasons, the purpose of this investigation was to determine the predictive powers of structural and process components for perceived organizational effectiveness, teacher job satisfaction, and overall student achievement in schools.

Theoretical Framework

Independent Variables: Bureaucratic Structure and Organizational Processes

Bureaucratic structure is defined as the formal characteristics of enduring patterns of operation in a school. Bureaucracy is designed to be relatively independent of particular individuals; that is, it refers to the relationships among different roles that have been created to achieve educational goals. Hage's (1965) axiomatic theory of organizations provides several useful concepts for investigating a school's structure. Centralization, formalization, complexity, and stratification are four properties that represent means to accomplish organizational goals. The Structural Properties Questionnaire was developed to measure these characteristics (Bishop and George, 1973, and Murphy, Bishop, and George, 1975).

Organizational Processes, in contrast to bureaucracy, refers to the more informal, interpersonal characteristics and processes that result as individuals interact in an organization. The conceptualization used to guide this study was developed by Likert (1961, 1967, 1972). This formulation incorporates concepts such as leadership behaviors, motivational forces, and interaction-influence patterns to map these processes on a continuum from exploitive-authoritative to participative.

If a school falls on the exploitive-authoritative end of the continuum, the interpersonal relationships are characterized by little trust, confidence or supportive behavior. Hostility pervades the school. At the opposite pole, the participative system is described as having a close, warm and friendly atmosphere in which supportive leaders and highly motivated employees share the responsibility for high performance. The intermediate portions of the continuum--benevolent-authoritative and consultive--tend to resemble the extremes from which they deviate. The benevolent-authoritative part has most of the trappings of the exploitive-authoritative system, only to a lesser degree. A school described as consultive is well along the way toward developing the characteristics of the participative system. Likert and Likert (1972) used this theoretical model to develop an instrument called the Profile of a School (POS).

Dependent Variables: Job Satisfaction, Perceived Organization Effectiveness, and Student Achievement

Job satisfaction was defined by Hoppock (1935) as any combination of psychological, physiological, and environmental circumstances that cause a person to say, "I am satisfied with my job." This definition has been widely held since Hoppock's original work (Vroom, 1964, and Smith, 1967). More specifically, satisfaction is a result of the teachers' job experiences in relation to their own values and needs. For this study, job satisfaction is the affective orientations of teachers toward their present work roles.

Perceived organizational effectiveness is the subjective evaluation that a school can mobilize its center of power for action (Mott, 1972). Effective organizations are able to produce more quantity with better

quality, to show flexibility, and to exhibit adaptability to a greater extent than less effective organizations. Mott formulated the Index of Organizational Effectiveness (IOE) to measure these three dimensions across a wide variety of organizational types. Using his conceptualization and measure in a variety of settings, Mott found that perceived effectiveness was greater in organizations with multiple elites who were functionally and normatively integrated. Moreover, this finding supports the statement that interpersonal processes are more important than the organizational configurations or structures to perceived effectiveness.

Student achievement is defined as the overall academic success that students within a school attain on a standardized achievement test battery. More specifically, the composite building scores for the Iowa Test of Basic Skills (ITBS), Form 4 (Linquist and Hieronymous, 1973) comprised the criterion for school achievement. The composite is formed by combining the student scores in five subject areas into a single index for school achievement. The test publisher has constructed a set of norms for this indicator which allows schools, as the unit of analysis, to be compared on their average performance percentiles.

Using the composite score also reduces the reliance on verbal achievement. This is highly advantageous because verbal achievement is affected strongly by individual socio-economic background variables. The result of using the composite, therefore, is to focus more sharply on the variables that can be manipulated by educational decision-makers to improve school performance.

In summary, the model for school effectiveness is multivariate; that is, the focus is on relationships as they jointly influence organizational success (Steers, 1975). Moreover, the criterion variables approximate

Hage's organizational ends--adaptiveness, production, efficiency, and job satisfaction. An attempt to integrate the model follows.

Rationale and Hypotheses

Hellriegel and Slocum (1974) concluded that several studies support the generalization that the more favorable the organizational climate, the better the performance and the higher the job satisfaction. Likert and Likert (1972) stated that the closer a situation approaches participative, the greater the likelihood of superior performance. Geis, Leonard, Madden, and Denton (1973) found that the openness of climate affects student achievement.

Several propositions and corollary statements of Hage's (1965) axiomatic theory also relate to the variables of this study. He postulates that higher centralization and formalization lead to higher production and efficiency but less job satisfaction and adaptation. Increased complexity, however, leads to lower production and adaptation but higher job satisfaction. The findings of Hoy, Newland and Blazovsky (1977) show that centralization in schools reduces morale but that increased formalization of the job description improves teacher morale. Pennings (1976) found that participative, decentralized, and autonomous organizations are more effective (higher production and satisfaction with less anxiety).

Other evidence exists for the contention that the bureaucratic structure impacts the effectiveness levels of schools. For instance, Anderson(1971) concluded that student achievement levels decrease as bureaucracy levels increase. Additional less direct evidence for the position is provided by George and Bishop (1971). They found that in more structured schools (high

SPQ scores) teachers were highly anxious and tense. Conversely, in less structured situations (low SPQ scores) teachers demonstrated a higher incidence of a motivator teaching style. Teachers with high professional orientations were found to implement innovative programs more frequently in less structured schools.

Based on these somewhat conflicting generalizations and findings, three hypotheses were derived to guide the study. Schools with more participative processes (higher on POS) and less structure (low on SPQ) will have significantly higher levels of (H-1) perceived organizational effectiveness, (H-2) job satisfaction, and (H-3) student achievement than schools with less participative processes and more structure.

Methods

Instrumentation: Independent Variables

Bureaucratic Structure. The Structural Properties Questionnaire (SPQ), Form 4 was used to measure the schools' bureaucracy as perceived by teachers. The SPQ was developed by Bishop and George (1973) and refined by Murphy, Bishop, and George (1975). Its conceptual basis is the means properties of Hage's (1965) axiomatic theory. The 45 items grouped into 12 factors essentially ask the respondents to describe their school using the constructs of (a) centralization with four factors, (b) formalization with five factors, and (c) complexity with three factors. A description of the major constructs and their related subscales follow.

Degree of centralization or hierarchy of authority refers to the power distribution within the school. It is the locus of authority to make decisions affecting the organization and to describe the degree of involvement exercised by members in decision-making. Each of the primary components of centralization -- participation in decision-making and hierarchy of authority -- is

represented by two of the following four factors: (a) participation in decision-making for classroom policy, (b) participation in decision-making for general curriculum policy, (c) hierarchy of authority locus for administrators, and (d) hierarchy of authority locus for teachers.

The degree of formalization or standardization describes how rules are used in the school and refers to the extent of work standardization and the amount of deviation that is permitted from the standards. The following five factors (5-9) operationalize the major components of this construct: (a) job codification, (b) role specificity, (c) standardization, (d) rule observation, and (e) professional latitude.

The degree of complexity or specialization involves the number of areas of expertise, the length of training required for each area, and level of required professional activity. Three factors (10-12) constitute the indicators of school complexity: (a) number of occupational specialties, (b) professional activities, and (c) professional training.

The teachers responded to each item with a four category response scale. The category descriptors for 41 of the items were rarely, sometimes, often, and very frequently. In the other instances, four levels of the hierarchy served as descriptors. The categories were assigned values from one to four. The factor score coefficients reported by Murphy, Bishop, and George (1975) then were employed with each item response to calculate weighted Z scores. The 45 item Z scores were then summed to yield 12 factor scores for each respondent. Individual factor scores within an analysis unit were averaged to produce a school score. The higher the score, the greater the organizational structure.

The validity of the SPQ is supported by several studies summarized by Bishop and George (1973). These researchers also reported alpha coefficients

as estimates of reliability ranging from .54 to .84 with most being around .80. The new scoring procedure precluded the calculation of reliability estimates with the present sample, but the early indicators support the reliability of the SPQ.

Organizational Processes. The Profile of a School (POS), Form 3 for teachers, was employed to measure the less formal interpersonal behavior and other processes in the school. The POS, for the most part, asks the respondents to describe the actual human behavior that occurs in the school rather than personal attitudes of the respondents.

This instrument is the result of Rensis and Jane Likert's efforts to adopt two industrial measures, Survey of Organizations questionnaire by Taylor and Bowers and the Profile of Organizational Characteristics, to the educational setting (Siepert and Likert, 1973). As mentioned earlier, the theoretical foundations for the POS is Likert's management systems framework which places schools on a continuum from punitive-authoritarian to group-interactive.

The teacher form of the POS contains 65 descriptive statements. Each is followed by an eight category response scale. An example set of category descriptors ranges from very little to very great. The categories are assigned values from one to eight with the higher numbers indicating a more participative climate.

Typically, the responses are processed by Rensis Likert Associates and a Data Printout is provided. While this method has positive characteristics for survey feedback, problems for research arise because the 65 items are combined to form 40 indicators in about 10 subgroupings that correlate to Likert's overall theory. The multiplicity and diffuse nature of the scales

in addition to their lack of internal consistency lessen the utility of the POS for research purposes.

Therefore, the data were processed for the present investigation by factor analyzing the 542 responses into a few number of subscales. Principal-components and oblique R-factor analysis procedures were used to determine its fundamental factor structure. The criteria for determining the number of factors were the following: scree test, discontinuity of eigen values (Cattell, 1968), interpretability (Rummel, 1970), Kaiser's (1960) eigen value of one, and the structure suggested by Likert (1972). No a priori preferences were made regarding the importance of these criteria. When a conflict among them occurred, a judgment was made as to which made the most overall sense.

The result was a four factor solution with the first three bearing a remarkable resemblance in content and structure to the industrial Survey of Organizations questionnaire described by Taylor and Bowers (1972). Factors one and two are very similar to the supervisory and peer leadership factors of the industrial questionnaire. Factor three is similar to the organizational climate factor and focuses on motivational forces, goal setting practices, and control processes for the staff. Factor four is similar in content to three but concentrates on student relationships. A description of the four factors and the highest orthogonally loaded item follow.

1. Principal Leadership (23 items). This factor contains items that describe the principal's behavior in terms of supportiveness, work facilitation, goal emphasis, and interaction facilitation. The focus primarily is at the principal-teacher level of interaction. The item, "How often do you see your principal's behavior as friendly and supportive?" had the highest factor loading of .81.

2. Teacher Leadership (22 items). This factor is very similar to principal leadership except the center of attention is on teacher-student relationships. Basically, the teachers are describing their own behavior in terms of supportiveness, work facilitation, goal emphasis, and interaction facilitation. The highest factor loading has .75 for the item, "How much do your students feel that you are trying to help them with their problems?"

3. Staff climate (12 items). The items constituting this factor tap areas such as perceived influence of different staff levels (teachers, principals, and central office administrators), interaction among teachers, and who hold high performance goals. The question, "At what level are decisions made about academic school matters?" had a factor loading of .67.

4. Student climate (8 items). The questions measure perceived student influence, use of student ideas, and student involvement. The highest factor loading was .68 for the item, "How much influence do you think students should have on non-academic matters?".

The item scores ranging from one to eight were summed to produce individual factor scores. The individual factors scores were averaged to generate the school score. The validity is well established by the developmental work reported by Taylor and Bowers (1972) and Likert and Likert (1972). The alpha coefficients as estimates of reliability for this sample are .96, .93, .87, and .83 for factors one to four respectively.

Instrumentation: Dependent Variables.

Job satisfaction. A six item instrument developed by Miskel, Glasnapp, and Hatley (1975) was used to assess the teachers' affective orientation toward the job. The measure is indirect and asks the teachers to indicate their feelings toward various job situations. The subjects respond by

selecting from a five category Likert-type scale ranging from strongly disagree to strongly agree. The categories are scaled from one to five with a higher score indicating greater job satisfaction. Finally, the instrument has high face validity and an alpha coefficient of .71 as an estimate of reliability.

Perceived Organizational Effectiveness. Mott's (1972) Index of Effectiveness (IOE), adapted to the school situation, was employed to measure this construct. The original items were modified by replacing those words pertaining to an industrial situation with words indicating an educational setting. For example, "school" was substituted for "division." Steers (1975) described the IOE as normative (attempts to specify those things an organization must do to become effective) and generalizable to all organizations.

The eight-item instrument asks the respondents to evaluate their school's effectiveness on production (quantity, quality, efficiency), adaptation, and flexibility. A five category response set was provided for each question which was scaled from one to five. Mott (1972) provided extensive indicators of validity and the estimated reliability for this sample was .89.

Student achievement. The composite building percentile scores from the Iowa Test of Basic Skills (ITBS), Form 4 (Lindquist and Hieronymous, 1964, 1973) constituted the measure of student achievement. The ITBS is comprised of a battery of five major subtests which are combined to form a composite percentile score. The reliabilities of the composite scores for the different grade levels are very high at .97 or .98.

The four perceptual instruments were divided into three separate questionnaires. The job satisfaction and perceived organizational effectiveness formed one questionnaire and the SPQ and POS comprised separate forms.

Sampling and Data Collection Procedures

The schools in one parochial and eleven public districts in northeastern Kansas that were using the Iowa Test of Basic Skills constituted the population. In the two largest districts, 14 and 18 schools were randomly selected. The 93 schools in the other districts were included for a total of 125. Eleven faculties opted not to participate, so 114 (91%) schools comprised the final sample.

Within each school 12 to 18 teachers were randomly chosen to complete one of the three instruments. Of the 1733 selected, 1619 (93%) voluntarily participated. To insure against a response set across the different measures and, therefore, to maintain methodological independence among the measures, the subjects within each school were randomly divided into three groups: one-third responded to the SPQ, one-third to the POS, and one-third to criterion instrument. The returns for each were 533, 532, and 554 respectively.

Since the school was the unit of analysis and not the individual, the data were aggregated by averaging the teacher responses within each school. The result was school scores for the 18 subscales comprising the SPQ, POS, job satisfaction, and perceived organizational effectiveness measures.

In most instances, a research team member attended a faculty meeting to describe the study and to gather the data. In a few cases, this procedure was not allowed and a designated faculty member distributed and collected the instruments to and from the selected teachers. The ITBS scores were provided by school districts' central offices. Due to differences in district testing programs, comparable ITBS scores were not available across all schools. However, adequate data were collected for

grades three, five, and six,

Analysis

The multiple stepwise regression analysis procedure from the SPSS: Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975) was used to test the hypotheses. Kerlinger and Pedazur (1973) caution that standardized regression coefficients or beta weights can be unreliable, especially with small samples. The sample sizes in this investigation were somewhat limited, particularly for the achievement data (N = 39, 43, 47). Four criteria, therefore, were established to guide the stepwise procedure. If the significance level for the overall regression equation fell below 1%, the variable added less than 1% variance, the significance level of the beta weight was less than the 10% level, or the variable lacked conceptual clarity, the regression analysis was terminated.

Results

The means and standard deviations for the 16 independent variables from the POS and SPQ measures and the dependent variables constitute Table 1. The four means for the organizational processes are the result of summing the 23, 22, 12, and eight items comprising the factors. To place the sample on Likert's continuum, the summed values must be divided by the items in each. The resulting values are 6.01 for principal leadership, 6.13 for teacher leadership, 5.32 for staff climate, and 4.61 for student climate. Since the conceptual mean of the continuum is 4.50, all of the subscales tend toward the participative end of the continuum. With the exception of the student climate factor, the schools are described by the teachers as being

TABLE 1

Means and Standard Deviations for the Variables Used in the Study

Variable Type Name	Mean	Standard Deviation
I. Independent Variables (N=114)		
A. Organization Processes		
-Principal Leadership	138.32	17.51
-Teacher Leadership	134.78	10.35
-Staff Climate	63.83	8.08
-Student Climate	36.92	4.85
B. Bureaucratic Structure		
1. Centralization		
-Participation in Decision Making--Classroom Policy	0.25	0.60
-Participation in Decision Making--General Curriculum Policy	0.35	0.51
-Hierarchy of Authority Locus for Administrators	0.09	0.63
-Hierarchy of Authority Locus for Teachers	-0.38	0.50
2. Formalization		
-Job Codification	0.45	0.60
-Role Specificity	0.28	0.82
-Standardization	-0.10	0.45
-Rule Observation	0.20	0.34
-Professional Latitude	0.25	0.64
3. Complexity		
-Number of Occupational Specialties	-0.27	0.49
-Professional Activities	0.25	0.48
-Professional Training	-0.12	0.58
II. Dependent Variables		
A. Job Satisfaction	21.92	2.61
B. Perceived Organizational Effectiveness	30.61	3.56
C. Student Achievement (Percentiles)		
-Grade 3 (N=47)	62.17	18.82
-Grade 5 (N=39)	58.89	20.71
-Grade 6 (N=43)	57.30	21.82

highly consultive with the two leadership factors approaching the participative.

Eight of the 12 SPQ factors have positive values which indicate a tendency toward higher bureaucratic structure. The perceptual dependent variables are slightly above the conceptual mean of 3.50 (Job Satisfaction $\bar{X}$ = 3.65 and Perceived Organizational Effectiveness $\bar{X}$ = 3.83). Finally, the student achievement scores are seven to twelve percentile points above the population mean. In summary, the sample can be described as using consultive processes, tending to be somewhat bureaucratic, and having positive effectiveness characteristics.

Table 2 presents the overall equation statistics for the five stepwise regression analysis procedures employed to test the three hypotheses. All were significantly different from zero at the 1% level. In addition, the explained variance (R^2) ranged from 24% to 44%. At the macro level of analysis, the hypotheses not only were supported statistically but the magnitudes of the explained variances are important. For example, the explained variances of achievement scores (38%, 44%, and 24%) by the situational variables are promising. It is granted that socioeconomic variables were not entered. Nevertheless, the consistency across the grade levels provides important support for hypothesis three.

The standard partial regression coefficients (beta weights) for the independent variables in the five equations comprise Table 3. Overall, 18 beta weights (22.5%) are significant beyond the 10% level. Only four independent variables fail to achieve significance in at least one equation.

The organizational process variables, taken as a group, are positively related to the criterion variables. A mixed relationship appears in considering the bureaucratic structure variables, however. The centralization variables are negatively related to the dependent variables. This means that more

TABLE 2

Multiple Stepwise Regression Equation Statistics Predicting Job Satisfaction, Perceived Organizational Effectiveness, and Student Achievement

Statistic	Job Satisfaction N=114	Perceived Organizational Effectiveness N=114	Student Achievement		
			Grade 3 N=47	Grade 5 N=39	Grade 6 N=43
R^2	0.32	0.44	0.38	0.44	0.24
F Value	12.61**	21.35**	6.56**	6.74**	6.17**
df	4,109	4,109	4,42	4.34	2,40

** Significantly different from zero at the 1% level.

TABLE 3

Standard Partial Regression Coefficients (Beta Weights) for the Multiple Stepwise Regression Analysis Equations Predicting Job Satisfaction, Perceived Organizational Effectiveness, and Student Achievement

Independent Variables	Dependent Variables				
	Satisfaction	Perceived Organizational Effectiveness	Student Achievement		
			Grade 3	Grade 5	Grade 6
A. Organizational Processes					
-Principal Leadership	.31***	-	-	-.48**	-
-Teacher Leadership	-	-	-	-	-
-Staff Climate	-	.22***	-	.71***	-
-Student Climate	-	-	-	-	-
B. Bureaucratic Structure					
1. Centralization					
-Participation in Decision Making--Classroom Policy	-	-	-.45***	-.28**	-
-Participation in Decision Making--General Curriculum Policy	-.14*	-	-	-	-.39***
-Hierarchy of Authority Locus for Administrators	-	-	-	-	-
-Hierarchy of Authority Locus for Teachers	-	-	-	-	-
2. Formalization					
-Job Codification	.24**	.49***	-	-	-
-Role Specificity	-	-	-	-	-
-Standardization	-	-	.45***	.36***	.24*
-Rule Observation	.14*	-	-	-	-
-Professional Latitude	-	.13*	-	-	-
3. Complexity					
-Number of Occupational Specialties	-	.15**	-	-	-
-Professional Activities	-	-	-.26**	-	-
-Professional Training	-	-	.30**	-	-

* Significantly different from zero at the 10% level.
** Significantly different from zero at the 5% level.
*** Significantly different from zero at the 1% level.

participation in decision-making and a closer locus of control of decisions are positively related to effectiveness. The formalization factors also are positively related to the performance criteria. Uniform role definition, standardization, and rule enforcement are associated with high scores on all of the effectiveness indicators. Finally, the complexity construct has a mixed relationship to perceived effectiveness and third grade student achievement. These findings suggest an intricate pattern of relationships that can be further explicated by considering the relationships within each equation or for each hypothesis.

The equation testing hypothesis one, that the structure and process variables are predictors of perceived organizational effectiveness, contains four beta weights significant beyond the 10% level. More participative staff climates (beta = .22), high formalization through job codification (beta = .49) and professionalism (beta = .13), and greater complexity in occupational specialties are positive predictors of this criterion. In other words, teachers describe the school as being organizationally effective when the decision-making is shared by a large number of different professional types, each within a sphere of expertise.

Hypothesis two, that participative processes and less structure lead to higher job satisfaction, is partially supported by four significant beta weights. These relationships suggest high job satisfaction depends on the following factors: participative principal leadership (beta = .31), less centralization or more participation in the decision-making for general curriculum policy (beta = -.14), and high formalization of job codification (beta = .24) and rule observation (beta = .14). Open communication and supportiveness from the principal in conjunction with uniform rule application to well-defined jobs lead to teacher job satisfaction.

Testing hypothesis three, regarding student achievement, represents a more complicated situation. The use of three grade levels with relatively small sample sizes along with the exclusion of background variables requires a cautious interpretation. Taken as a whole, however, two important sets of relationships are evident. First, centralization of decision-making is negatively related to student achievement (betas = -.45 for grade 3, -.28 for grade 5, and -.39 for grade 6). Second, high formalization and, in particular, standardization are positively associated with the three achievement scores (betas = .45 for grade 3, .36 for grade 5, and .24 for grade 6).

The two negative relationships between principal leadership (beta = -.48) and achievement and between professional activities (beta = -.26) and achievement lack conceptual clarity. The generalization seems unacceptable that nonsupportive, closed principals and professionally inactive teachers produce positive student achievement scores. Since the relationships are isolated in single, different equations, perhaps the best explanation is to attribute the results to the earlier mentioned unreliability of beta weights in small samples. Until further evidence is forthcoming, this conclusion appears appropriate.

Summary and Conclusions

The purpose was to investigate factors within schools that can be changed by educational administrators which, in turn, will enhance performance levels. Several potentially important relationships were found, not all conforming to the hypotheses. The primary exception involves the centralization component of bureaucratic structure. In general, however, the relationships were consistent across the effectiveness criteria for

the organizational processes factors and the bureaucratic structure constructs of centralization and formalization. Combining the dependent variables into a single criterion and applying the present results yields the following generalization: Schools characterized (a) by more participative organizational processes, (b) by decentralized decision-making structures for classroom and curriculum policy, and (c) by more formalized structures are the most effective.

More specifically, the findings support those of Hoy, Newland, and Blazovsky (1977) that centralization reduces morale but that increased formalization improves teacher feelings. Penning's (1976) findings also were supported. In regard to Hage's (1965) formulation, the results are mixed. The findings here reverse his postulates for centralization. For formalization, however, all the criterion variables were positively associated with it. No systematic relationships appeared for the complexity factor so no suggested modifications are offered.

In conclusion, several findings suggest modifications that can be incorporated into planned change programs for improvement of school effectiveness. Moreover, important questions remain to be explored. Hopefully, further theoretically based research will follow.

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