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ABSTRACT

A variety of hypotheses dealing with the participation in decision-making of members at different levels of rural schools and the degree of implementation in these schools of planned organizational changes are explored. Participation is examined in two spheres: decisions relating to the operations of the school district in general, and planning of a specified program of comprehensive organizational change. It is hypothesized that both kinds of participation are related to the degree of implementation. It is further demonstrated that total influence in the organization can vary and that this total influence affects implementation as well. (Author)

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PARTICIPATION AND THE IMPLEMENTATION OF PLANNED CHANGE

by

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Introduction

In recent years, increasing attention has been given in the organizational change literature to the problem of implementation of planned innovations. (Gross et al, 1971; Charters et al, 1975; Berman and McLaughlin, 1975; Rosenblum and Louis, forthcoming) Clearly the adoption of innovations is not tantamount to implementation, and in order for planned innovations to achieve intended impacts they must be successfully implemented. The failure of many educational innovations can indeed be traced to their non-implementation. (Pincus, 1974; Kritek, 1976) Much of the growing literature on implementation of planned innovations has focussed on the antecedents of change (Glaser, 1971; Greenwood et al, 1975) and on the organizational characteristics that facilitate (or hinder) the implementation of change. (Deal et al, 1975; Gross et al, 1973) The process of planned change in organizations is conditioned by characteristics of the organizational setting. One such characteristic is the decision-making process and the levels of influence of role partners in the organization. (Hage and Aiken, 1970; Zaltman et al, 1973)

There is a great deal of controversy in the organizational change literature about the importance of participation and influence of the various role partners in an organization in order for change to take place. (Zaltman et al, 1973; Shepard, 1967; Goodlad and Klein, 1970) In order to explore this issue further, the objective of this paper is to examine the relationship between influence in planning and the decision-making process in schools, and the implementation of planned organizational change.

Perspectives on the Problem

A basic tenet of Human Relations theory deals with the need for participation by lower level staff members in an organization in order to

facilitate change. An underlying assumption of many organizational researchers is that if those who will be affected by decisions are involved in decision-making, they will be more willing to make the necessary adjustments to implement planned change. (Simon, 1965; Coch and French, 1948; Gaynor, 1975) It is generally maintained that the wider participation of diverse groups will lower the probability that various needs will be overlooked, thereby enhancing implementation and overtoming resistance to change. (Bennis, 1966; Coughlan and Zaltman,1972; Havelock,1971) Unfortunately the question of participation is often treated not as a testable hypothesis but as an assumption underlying successful implementation. The evidence, however, is not that clear-cut, and a number of authors have questioned the generalizability of the relationship between decentralization of decision-making and the implementation of planned innovations. (Arnn and Strickland, 1975; Adams et al., 1976; Lischeron and Wall, 1975) Many studies of change have been concerned only with the initiation of change, but different structures and processes may be required at later stages in the change process. Shepard (1967) found that implementation requires a specific line of authority. Wilson (1966) also concluded that there is a need for concentrated authority as a means of exerting influence over organization members in the implementation process. Although Hage and Aiken (1970) found that "program change" was positively associated with a participatory decision-making structure, it has been pointed out that the nature of the change may determine whether a highly centralized or decentralized structure is more effective. Changes which are highly dependent on members of the organization for implementation and can be easily altered by their actions may require greater centralization than those changes which are straightforward and difficult to subvert. Some educators maintain that critical decisions about planned organizational

change must be made by the administration. (Bishop, 1961; Brickell, 1961; Heathers, 1967)

The question of participation and influence is a complex one. There is a need to elaborate the issue of participation by asking "participation in what?" If democratized decision-making is associated with implementation, one may ask whether it is important to ensure participation in planning for innovation, or whether it is also important to have a participatory organizational structure (e.g., participation in on-going organizational activities).

Another important issue concerns the total distribution of influence within the organizational system. The work of Tannenbaum (1962) suggests that organizations function most effectively when the influence of persons who occupy lower positions in the hierarchy of authority is increased, but where the influence of upper level personnel remains high. Thus, the question of whether decentralization of influence, or high levels of influence and participation at all levels is important in the change process is a crucial one.

In summary, the specific issues to be explored in this paper are the following:

1) What are the relationships between the influence of various school personnel (Superintendents, Principals and Teachers) in the planning process and the implementation of planned change?

2) What are the relationships between the influence of various school personnel on on-going organizational decisions and the implementation of planned change?

3) How do interactions between the levels of influence of various school personnel over planning and on-going decision-making affect the implementation of planned change?

The Setting

The data used in this analysis were collected from 45 schools located

in ten rural school districts. The ten school districts are participants in the Experimental Schools Program funded by the National Institute of Education. Under the auspices of NIE, these small school districts (eight of which had six schools or less) undertook the planning and implementation of "comprehensive" district wide change. Comprehensiveness was defined by NIE as affecting five facets of the educational system: curriculum, staff, community participation, administration and governance, and the use of time, space and facilities. While each district's program was developed at the local level, it was required to reflect the federally defined objective of comprehensiveness.

The school districts themselves represent a wide geographical and organizational spectrum of rural schools. Situated in diverse parts of the country from New England to Alaska, some were located on centralized campuses, while others were in recently consolidated districts which maintained small schools at considerable distances from one another.

The data used in this paper is part of a larger research effort which is an integral part of the Experimental Schools Project. The Organizational Change Study has been systematically gathering data on the stages of the planned change program within the districts and schools, and on organizational characteristics that may affect or be affected by such change programs. (Herriott and Rosenblum, 1976; Rosenblum and Louis, forthcoming) Data has been collected both through surveys of the school personnel involved in the program, and through professional ethnographers who resided in each of the districts for three years during the implementation phase.

Measures and their Scores

Independent Variables: The independent variables in this study attempt to measure the degree to which various members of the school system exert influence in two kinds of activities: the planning of the change program associated with the Experimental Schools project in their district, and the on-going administrative decision-making process. In the fall of 1973, at the end of the planning year, all professional teachers in the district were administered a questionnaire which covered a wide variety of issues regarding the operations of their school and district. The overall response rate to this questionnaire was 72%. Since the purpose of this study was to look at the behavior of schools as organizations rather than individual teachers, teacher responses within each school were averaged to obtain a school score on each of the relevant items. There are 45 schools in the study, distributed across 10 school districts.

I) Influence in Planning: One item in the questionnaire asked the teacher to rate the influence of a variety of groups (Superintendants, Principals, Teachers) on the planning of the Experimental Schools program on a five point scale.

2) Influence in Organizational Decision-Making: Another item in the questionnaire asked the teachers to rate the level of influence (on a scale from 0 to 3) that superintendants, principals, and teachers had over decisions that are commonly made in school systems. These decisions fell into three general categories: pedagogical decisions (such as selection of textbooks, determining the content of classroom curricula), routine administrative decisions (such as determining salary levels and budgets), and non-routine decisions (such as determining the need for change). Within

each of these decision-making areas, the scores for each school were averaged over the relevant items. The three subscales were then added to form a summary score which could, theoretically, range from 0 to 9 reflecting the level of influence of each of the three parties on decision-making.

The mean scores for each of these 3 role partners for the 45 schools on both independent variables may be seen in Table 1. This data indicates that the overall level of influence of each of the groups is associated with the position of the groups in the hierarchy. In general, Superintendants have the greatest influence over the planning process, Principals the second greatest, and teachers the lowest.

With regard to the organizational decision-making index, again we find that levels of influence are apparently associated with position in the hierarchy, with Superintendants having the greatest overall influence, and teachers the least.

Dependent Variables: The dependent variable, the "scope of implementation", was designed to measure the degree to which the school had implemented comprehensive changes by the end of the fourth year of the program. An important characteristic of the scope of implementation score is that it takes into account the fact that innovations in organizations do not all have the same characteristics. Some affect large numbers of people in relatively small ways, while others may have an enormous impact upon a relatively few number of peope. Because change is not a unidimensional variable, an attempt was made to develop a differentiated approach to two basic questions about change: "how much" and "how different."

Table 1

Mean Scores on Influence in Planning Change and Influence in Decision-Making for Superintendants, Principals and Teachers

(N = 45 schools)

	Mean	SD
Planning Influence*		
Superintendant	3.71	.54
Principal	3.06	.42
Teacher	2.41	.71
Decision-Making Influence**		
Superintendant	5.54	.83
Principal	5.36	.92
Teacher	4.69	.60

* (scale: 0-4)

** (scale: 0-9)

Data regarding the scope of implementation of change were collected through a structured questionnaire that was completed by a professional anthropologist or sociologist who resided at each site. District and school administrators were consulted in the process of filling out the forms in order to ensure that the data reflected school personnel's judgements about the levels of implementation as well.*

The dimensions of change that were measured included the following:

1) Pervasiveness, or the number of students and staff involved in the planned change program. A pervasiveness score for the school was obtained by taking the log of teachers and students affected by the program.

2) Extent, or the amount of time that students and staff were involved. This was measured by taking the log of the average percent of classroom day spent on planned change activities by teachers and students.

3) Degree of Difference, or the degree to which planned change activities in the areas of administration and governance of the school, community participation, exchange of resources between the school and other organizations, and the use of time space and facilities represented real changes from previous activities in these areas.

4) Systemic Change, or the degree to which planned change activities resulted in innovative curricular and structural arrangements for education.

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*Very few discrepancies between the ethnographer and administrators were reported, and those discrepancies were relatively minor. Where a discrepancy in judgements arose, the judgements of the on-site researcher were used after discussions about the nature of the discrepancy. In all cases discrepancy consisted of administrators rating the level of change on a given question slightly higher than the on-site researcher. The discrepancy in almost all cases consisted of a one point separation on a six point scale. A more detailed discussion of these measures may be found in Rosenblum and Louis (1977).

Since each of these dimensions was measured using a different scale, in order to give them equal weight in an overall measure of change each was normed to range from 0 to 100. They were then added to produce a summary Scope of Implementation Score, which had a theoretical range of 0 to 400. The average scope score for the 45 schools in the sample was 176.

Analysis and Results

When the correlations between the scope of implementation and the influence variables are examined, it is clear that high levels of influence of the Superintendant, both in planning and general decision-making, are strongly positively related to scope. (see Table 2) For Principals and Teachers, the correlations are low indicating that increasing levels of influence in planning and decision-making have little impact on the implementation process.

A stepwise regression procedure performed for each of the types of influence produced a somewhat unusual pattern in the data with regard to the differential influence of Principals in planning and in on-going decisions. The standardized regression coefficients for planning influence show again that the Superintendent's involvement facilitates implementation of change, while the Teacher's role is negligible. (see Table 3) The beta score for Principal planning influence, however, is moderately high, but with a negative sign. In other words, when the effects of the influence of other actors over planning are removed, increasing Principal influence has negative implications for the successful implementation of the change program.

Table 2

Correlation Matrix for Variables
on Influence in Planning, Influence in Decision-Making
and Scope of Planned Change

(N = 45)

	Superintendant Influence on Planning	Principal Influence on Planning	Teacher Influence on Planning	Superintendant Influence on Decision-Making	Principal Influence on Decision-Making	Teacher Influence on Decision-Making	Scope of Implementation
Superintendant Influence on Planning	-						
Principal Influence on Planning	.22	-					
Teacher Influence on Planning	-.19	.63**	-				
Superintendant Influence on Decision-Making	.55	-.10	-.13	-			
Principal Influence on Decision-Making	-.27*	.19	.19	-.22	-		
Teacher Influence on Decision-Making	-.07	.20	.37**	.03	.19	-	
Scope of Implementation	.33**	-.08	-.13	.41**	.09	-.04	-

* Significant at .05 level

** Significant at .01 level

Table 3

Stepwise Regressions of Scope of Implementation on Participation in Planning and Participation in On-Going Administration by Various Actor Groups

(N = 45 schools)

A. Participation in Planning

Variable	Multiple R	R^2	Adjusted R^2	R^2 Change	β
Superintendant	.33	.11	.09	.11	.39
Principals	.36	.13	.09	.02	-.21
Teachers	.37	.13	.07	.002	.07

B. Influence on Decision-Making

Variable	Multiple R	R^2	Adjusted R^2	R^2 Change	β
Superintendant	.41	.16	.15	.16	.46
Principals	.45	.20	.16	.04	.21
Teachers	.45	.21	.15	.008	-.09

On the other hand, when general decision-making influence is examined, the level of principal influence is positively associated with implementation. Superintendant influence remains highly correlated, and teacher influence uncorrelated.

The results of the regression confirm that the influence of the top school administrator is apparently crucial in both the planning and implementation process. District level involvement is overwhelmingly more important in predicting implementation than involvement of lower level administrators or teachers. The data indicate, additionally, that the Principal's role has more impact on implementation than does that of Teachers, but it also suggests that the Principal influence has an ambiguous relationship to change. On the one hand, Principal participation seems to impede change where involvement is in the planning phase, but facilitates it where involvement is high in general decision-making.

These results do not, however, take into account a crucial aspect of organizational functioning. In the school change process, actors at the various hierarchical levels do not act independently, but either interact or react to behaviors exhibited by the other actors in the system. Thus, it would be premature to conclude on the basis of the simple correlations and beta weights that the key to successful implementation of district-wide planned change is to be found solely in the presence of a strong chief administrator. Rather, we must examine the possibility that it is the structuring of patterns of influence within the district that determines successful implementation.

In order to make a preliminary examination of the impact of interaction between levels of influence held by Superintendants, Principals and Teachers, cross product terms for each of the role partners were computed for both planning

and general decision-making influence. These cross products were then entered separately into regressions that included the separate terms for each actor group. The objective was to see whether the cross product terms would produce any increase in the multiple R^2 over and above that contributed by the individual actors.

The results of this analysis are presented in Table 4. This Table indicates that for influence over the planning of change, all of the cross products increase the R^2 by at least 2%. The greatest increase in the R^2 is contributed by the interaction between Teacher and Superintendant influence over planning, while the lowest contribution is made by the interaction between Teacher and Principal levels of influence over planning. For general decision-making influence the Superintendant-Principal and Superintendant-Teacher cross products both increase the R^2 by 3%. The interaction between Principals and Teachers contributes only .01%, however.

The cross product terms are, by their very nature, highly correlated with the main terms. Thus the fact that we find increases of several percentage points in the multiple R^2 indicates that interaction effects between the influence of various role partners may contribute substantially to our understanding of the implementation process. The nature of these interactions is the next issue to which we turn.

The interaction between influence at various levels in the school hierarchy was further examined by dichotomizing both types of influence (using the median) for each actor group. Correlations between the influence of two of the groups and implementation were then calculated when the influence of the third actor was high or low. While dichotomizing results in a loss of much of the power of the data under the assumption of linearity, the limited

Table 4

Increase in Multiple R^2
when Interaction Terms are
Added to the Regression Equations

(N = 45 schools)

	R^2 Main Terms	R^2 with Cross Product	Increase in R^2
A. Participation in Planning			
Superintendant X Principal	.13	.21	.08
Superintendant X Teacher	.13	.36	.23
Principal X Teacher	.13	.15	.02
All Cross Products	.13	.38	.25
B. Influence on Decision-Making			
Superintendant X Principal	.21	.24	.03
Superintendant X Teacher	.21	.24	.04
Printipal X Teacher	.21	.21	.001
All Cross Products	.21	.27	.07

number of cases prevents an examination of the finer structure of the data. A further drawback of the small N is the inability to examine the levels of influence of all three actor groups simultaneously. Despite these limitations, the data suggest some interesting interaction patterns between influence and implementation of planned change. The results of this analysis for planning influence are presented in Table 5, and those for general decision-making influence in Table 6.

Looking first at the data on planning influence, we find that when the Superintendant's influence of planning is high, both Principal and Teacher planning influence are strongly negatively associated with implementation. Under conditions of low Superintendant influence, on the other hand, both Principal and Teacher influence are positively associated with change. In the case of the Teachers, the positive correlation is quite small (.10), but for Principals it is somewhat stronger (.24).

When the effects of high and low influence in the case of Principals and Teachers are examined, a common pattern emerges that is quite different from that found in the case of Superintendants. In both cases, where the influence of the school-based actor over planning of change is low, the influence of the Superintendant is correlated with implementation at a high level (in both instances over .50). When their influence is high, however, correlations between Superintendant influence and implementation are substantially reduced.

The opposite results occur when we look at the relationships between Teacher and Principal influence. Here it appears that when the planning influence of one is high, the influence of the other is positively correlated with change. When influence is low, on the other hand, the influence of the other school-

Table 5

Correlations between Planning Influence of Actor Groups and Scope of Implementation under Conditions of High and Low Planning Influence of Role Partners

Superintendant Planning Influence	R Principal Influence and Scope	R Teacher Influence and Scope
High	-.36	-.38
Low	.24	.10

Principal Planning Influence	R Superintendant Influence and Scope	R Teacher Influence and Scope
High	-.02	.21
Low	.56	-.37

Teacher Planning Influence	R Superintendant Influence and Scope	R Principal Influence and Scope
High	.15	.19
Low	.67	-.20

Table 6

Correlations Between Decision-Making Influence of Groups and Scope of Implementation Under Conditions of High and Low Authority of Role Partners

Superintendant Decision-Making Influence	R Principal Influence and Scope	R Teacher Influence and Scope
High	.02	-.42
Low	.21	.12

Principal Decision-Making Influence	R Superintendant Influence and Scope	R Teacher Influence and Scope
High	.30	-.33
Low	.54	.15

Teacher Decision-Making Influence	R Superintendant Influence and Scope	R Principal Influence and Scope
High	.30	-.04
Low	.51	.24

based actor group is negatively related to change. To summarize, the influence of Principals and Teachers appears complementary. When the influence of either is high, increasing influence on the part of the other facilitates change. Between school based actors and Superintendents, however, no such complementary effect exists. We see instead a pattern that suggests that high influence over planning both within the school and within the central office is the condition which was least likely to produce implementation.

The results presented in Table 6 indicate that a somewhat different pattern of interaction effects exists in the case of influence over general decision-making. No matter which pair is examined, we find that when one actor group's decision-making influence is high, the influence of his/her role partners is less highly correlated with implementation than when the actor's influence is low. Within this general finding, we can locate more subtle distractions, however.

When the decision-making influence of either administrator is high, the influence of Teachers is strongly negatively correlated with implementation. When the influence of either administrator is low, on the other hand, there is a modest positive correlation between Teacher influence and implementation. In both cases, the difference between the correlations of Teacher influence and implementation under conditions of high and low administrators upon one another, on the other hand, and the effects of Teachers upon administrators, is considerably less.

Taken as a whole, the findings suggest a number of conclusions that contradict prevailing assumptions about the importance of participation and influence at various hierarchical levels on the implementation of planned change.

The data suggest quite strongly that the successful implementation of a district-wide change program is most effectively facilitated by the presence of a chief administrator who dominates both the planning process and the administrative decision-making in the school system. Despite the fact that actual implementation was carried out on the school and classroom level, high levels of participation of Teachers in planning change, and high influence of Teachers and Principals in the general decision-making process in the school and district are not always associated with higher levels of actual implementation.

This result is not surprising in light of both empirical findings and change theories that stress the need for strong organizational support for systematic change efforts (Deal, Meyer and Scott, 1975; Zaltman et al., 1973) More surprising, however, is the fact that within these school districts there seems to be a zero-sum relationships between the influence of various parties and change. Change literature that emphasizes the importance of participation operates under the assumption that change will be most likely to occur when the total influence in the organization is raised by increasing influence at lower levels in the hierarchy, while maintaining leadership in the central office. Our data suggest, on the contrary, that where the influence of two actor groups in the school system is high, the level of change is likely to be less than when only one group's influence is high. Table 7, for example, presents the relationship between Teacher and Superintendent planning influence and scope of implementation, where each of the variables is dichotomized. Here we see that when both Superintendant and Teachers both have high influence, 38% of the schools had high implementation scores. When only one of the groups was high, however, 60% of the schools fell above the

Table 7

Percentage of Schools Falling Above the Median Scope of Implementation Score under Conditions of High and Low Teacher and Superintendant Influence over Planning

Teacher Influence	Superintendant Influence: High	Superintendant Influence: Low
High	38% (5/13)	60% (6/10)
Low	60% (6/10)	42% (5/12)

median implementation score. These findings suggest that there may be a competitive tension between the hierarchical levels within schools which has major implications for the process of initiating and implementing planned change on a district-wide level.

While the zero sum relationship between Teacher and Superintendant influence exists both for the planning of change and for general decision-making influence, the role of the Principal in the change process appears ambiguous. In the case of planning influence, the Principals and Teachers participation interacts in a reinforcing way. Actual levels of teacher and Principal planning influence are highly associated (.63). In addition, we find that where both have high influence on planning, implementation is more likely to occur than where only one is high. In the case of planning influence, therefore, it appears that the zero-sum phenomenon is restricted to the relationship between school based personnel and the chief administrator.

On the other hand, when we examine general decision-making influence, we do not find a complementarity between Teachers and Principals. Here it appears that high general administrative influence on the part of the Principal is associated with a negative correlation between Teacher decision-making influence and implementation. High Teacher influence has the same dampening impact on the positive association between Principal influence and change. The implications of this finding are that the Principal's role is quite different in the planning process and in the general administrative management of the schools. In the planning process the Principal functioned as a school-based person. However, in the on-going administrative and decision-making process, the Principal's role seems more ambiguous.

An additional aspect of the Principal role is puzzling in light

of the findings of other studies. Organizational autonomy, which is to a large extent dependent on the exercise of leadership and influence from principals, and principal influence have been found in other studies to be associated with adoption of innovations. (Deal et al, 1975) In this study, however, the influence of the Principal is quite limited. Even under the conditions which appear to most facilitate a relationship between Principal influence and implementation, the correlations are modest, and much lower than those between Superintendent influence and implementation.

Discussion

A number of factors may help to illuminate the results presented above. In particular, some suggestions about the roles of Teachers and Principals in the planning and implementing of change and the structure of schools as organizations bear upon the question of participation and the process of innovation in schools.

Teacher Autonomy: One question raised by our data is why the apparent lack of impact of Teacher influence? Increases in Teacher influence seem to be focused on the arena of increased professional autonomy in the classroom. Within our sample, for example, Teacher influence in ongoing organizational decisions is positively correlated with Teacher's assessments of the degree to which they are able to function autonomously in the classroom (.38).* Because classroom autonomy is a jealously guarded right of highly professionalized teaching staffs, schools with more powerful teachers may tend to resist innovations that emerge from the Superintendant's office, as opposed to being generated within their own work. Classroom autonomy, like teacher influence, is negatively

*Classroom autonomy was measured by presenting Teacher respondants with a list of decisions related to classroom functioning. Teachers were asked to indicate which of these decisions they could make without consulting a superior. Autonomy was computed by counting the number of decisions rated by the teacher as always being made without consultation.

related to change (-.30). This may be particularly true for innovations that attempt to standardize teaching procedures or curricula across classrooms, thus reducing the range of "professional judgement" available to the Teacher. Resistance to district-wide changes by influential teachers is not necessarily inconsistent with previous findings that staff professionalism is associated with innovations in schools. The important issue is the origin of the innovations.

One of the frequently expressed goals of participation in planning is to reduce resistance at lower levels to the change. It is important to note, however, that within our sample, Teacher and Superintendant influence over planning are negatively correlated. Thus, as Teacher input into the planning process increases, the critical Superintendant role becomes diluted, and the overall impact of Teacher participation may be washed out.

The structure of Role Relationships in Schools: Schools within school districts are typically structured as segmented rather than cooperative, organic systems (Deal et al, 1975; Bidwell, 1965). In the segmented professional organization; each professional group has their own sphere of influence, and the activities of one may have little or limited impacts on the activities of another. Increases in teacher autonomy in a traditionally structured school, for example, do not necessarily increase the influence of Teachers as a group upon the activities of the school, but only the influence which each exercizes in his or her protected domain. Under these conditions, increasing influence within the segmented units should not logically lead to more concerted joint effort at achieving a cooperative goal, since the professionals are not accustomed to working under conditions where the development of common solutions to common problems is valued. The zero-sum interaction of

influence found in our data substantiate the notion that schools are segmented not only physically, but also in terms of decision-making.

The segmentation of schools has additional implications for the role of the Principal in facilitating change. Where professional autonomy is high, the Principals may be less involved in general pedagogical decisions. Thus, the roles of Teacher and Principal also become segmented, with the Teacher attending to the education of students, while the Principal becomes more involved with management issues other than those affecting classroom activities.

The "normal" conditions of segmentation of roles may be temporarily altered where the planning of a centralized change program is at stake. Because this is an unusual event, Principals and Teachers may more easily form a cooperative unit in attempting to incorporate specific school needs and problems into a change program. If, as was generally the case in the Rural Experimental Schools Program, such cooperative planning efforts are limited to an initial planning phase, cooperation between principals and teachers is a temporary phenomonon. The more typical patterns of segmentation will return during the implementation phase unless substantial effort is made to develop cooperative and on-going joint efforts for the later phases of the change program. In the Experimental ES program, for example, school wide or district wide training programs to facilitate change were generally limited to the initial implementation phases, an indication that participatory planning processes were not followed up by participatory management of the implementation effort.

Principal Leadership: The segmentation of schools provides only a limited explanation for the apparent lack of impact of Principal influence. Principals occupy a position in the hierarchy of the school district which may be characterized by stress in a period of district-wide planned change. On the

one hand, their professional staffs expect them to represent and protect professional interests in the classroom, and to moderate what may be thought of as unreasonable incursions upon professional authority. The Superintendants, on the other hand, may expect Principals to act as an administrative representative in ensuring the implementation of the change as mandated by the central office. However, the impact of the Principal as a powerless functionary caught between opposing forces contradicts the data, which suggest that Principals do have relatively high levels of general administrative influence within the school system.

One explanation for the apparently slight relationship between principal influence and the outcomes of the change programs may be found if the dependent measure of implementation is examined in greater detail. It will be recalled that the scope of change was composed of four individual sub-measures, two of which reflected the "quantity" of change in terms of time and number of participants, and two that reflected the "quality" of change in terms of the comprehensive reorganization of the structure and curriculum content of the school. Table 8 presents the results of a regression of the "quality" and "quantity" of change on the decision-making influence of the three actor groups. This Table indicates that while Principals have a negligible impact upon the "quantity" of change, their impact upon "quality" is quite high. The beta coefficient for Principal decision-making influence and quality is, for example, .33. It is equally important to note that the findings with regard to the influence of Superintendents and Teachers are similar for these two different dimensions of change. That is, Superintendent influence has a strong positive relationship, and Teacher influence a negligible one.

The quantity measure reflects indicators of change that are both highly visible and easily mandated by a superintendent. Quantity can be achieved in the

Table 8

Stepwise Regressions of "Quality" of Change and "Quantity" of Change on Authority Variables

	Multiple R	R^2	Adjusted R^2	R^2 Change	β	Simple R
A. Quality of Change						
Superintendant Decision-Making Influence	.35	.12	.10	.12	.43	.35
Principal Decision-Making Influence	.46	.22	.18	.09	.33	.21
Teacher Decision-Making Influence	.48	.23	.17	.01	-.12	.04
B. Quantity of Change						
Superintendant Decision-Making Influence	.32	.10	.08	.10	.33	.32
Principal Decision-Making Influence	.32	.10	.06	.001	-.04	-.02
Teacher Decision-Making Influence	.32	.10	.04	.001	.04	-.04

absence of leadership and commitment to innovation, for many people can be involved for substantial periods of time, but the content of activities can be essentially the same as those that existed previously. Ensuring that the change actually represents a difference in the structuring, content and management of the school, however, represents a more subtle and enduring aspect of innovation, for it is a reflection of the fact that does not merely represent the "new" but also the different. The data suggest that achieving real changes in the operations of the school requires school-based leadership from the Principal, in addition to that provided by the chief district administrator. The fact that the beta coefficients are high for both Principals and Superintendents indicates that an integrated administrative structure to support changes is very likely a pre-requisite of effective systematic change programs.

Some additional considerations: It is important to point out that the data presented in this paper are, at this point, limited in their generalizability. First, the sample of schools involved in the program are located within rural districts, and may therefore be characterized by authority structures that are not characteristic of schools as a whole. Other analyses have indicated that even within this sample the level of Superintendant influence within a district is, to some degree, correlated with characteristics that are associated with rurality, such as the number of schools within the district, and the level of complexity of the schools. (Rosenblum and Louis, forthcoming) As schools systems become more complex and larger, the Superintendent's ability to directly influence what occurs within a given school is likely to diminish, and the relative significance of school-based actors to increase. On the other hand, if the patterns revealed in this data are at all representative of what might occur in other school systems, we would predict that the implementation of

district wide change in a more complex and heterogeneous school system would be even more difficult, since such districts are even more likely to be characterized by segmentation between the district office and schools.

Second, it must be emphasized that these results are not generalizeable to change programs that are generated within schools, using participatory planning and management. We are dealing here with a program that was not only initiated from the district office, but which was also required to be responsive to standards and conditions that emerged from an even more distant source--the federal government. In fact, other data suggest that the role of the federal government in its attempts to mold the change programs within the participating districts may have augmented the role of the Superintendant, since the program negotiations were made through the district office. (Corwin, forthcoming)

Finally, it is important to reiterate that it is the segmental nature of the educational system, and the authority structure within the school system that is most likely the crucial factor in explaining the outcomes of this analysis. Until the educational system initiates structural changes that increase the levels of cooperation, integration and participation in the on-going functioning of education, the implementation of comprehensive system-wide changes may be feasible only in a small number of districts with unique characteristics. Few would be satisfied with the simple recommendation that to facilitate change it is necessary to reduce the teacher role to a non-professional and subordinate status. If a system-wide innovative program is desired, it will be necessary to first build a tradition of cooperative activity within schools and within the district as a whole which can serve to reduce the segmental nature of the authority structure while not undermining the professional and leadership contributions available from professionals at all levels within the system.

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