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ABSTRACT

This paper discusses different approaches to analyzing the internal control structure of organizations and describes a model interview structure that was developed for use in a longitudinal study of decision-making in 41 elementary schools. The model is designed to garner objective accounts of school decision-making through periodic interviews of informants on the staff of each subject school. The pattern of decision-making in each school was classified on the basis of interview data into five basic decision types according to the reported relationship between those rendering decisions and those governed by the decisions. Analysis of the data showed that elementary schools with unit organization tend to have higher levels of collegial decision-making on school and class-related issues than do conventionally organized elementary schools. (JG)

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CONTROL STRUCTURE IN THE ELEMENTARY SCHOOL

by

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Abstract

We report on the characteristics and findings of the control structure interview. The interview is designed to garner objective accounts of decision making in the school. Decisions of interest pertain to those in which the classroom behavior of teachers is at stake. Accompanying the data collection and analysis procedures is a unique scheme by which decisions are classified according to the relationship between those who render the decision--the input population--and those whose behavior is to be governed by the decision--the output population. We report on data collected in 41 schools in the spring of 1974 and on a group of 29 in which the measure was administered twice more. The pattern of decision making described by the technique corresponds to predictions concerning differences in the organizational structure of the various elementary schools. Schools with a unit organization have higher levels of collegial decision making over school and class issues than conventionally organized elementary schools. These differences are illustrated both cross-sectionally and longitudinally. The interview proves to have considerable utility where objective as opposed to subjective accounts of decision making are required.

Control Structure in the Elementary School*

Much of the literature on formal organizations focuses sharply on issues relating to the control of the organization and those who occupy it. Control structure typically refers to the standardized or patterned means by which the behavior of an organization and its various members are regulated.

In one respect, control is exerted by the organization's environment. Where organizations vie, their behavior is governed by strategies and rules of competition. Where market controls are less prominent there is often greater effort devoted to commit the organization to comply with state and national regulations. Public schools fall into the latter category. They are "sole source contractors" in a given locale and report more or less continuously on their compliance with multitudinous state and federal regulations.

Within their boundaries, organizations generate a second set of compliance requirements. These are necessitated by the fundamental nature of organizational work; the recombination of various inputs to form a new, socially desirable result. The recombining requirement gives rise to various organizational structures which, depending on the nature of inputs, technology and products, serve to distinguish between and among different organizations.

Although there exists considerable variation among organizations of the same and different types, all can be depicted at a very abstract level as having the same control structure elements. These include generating the

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means by which the contributions of each unit, individual, group, department, branch, or subsidiary, are specified, often in advance, evaluated and rewarded. We have chosen to call these three elements norms, surveillance and sanctions (Packard, et al., 1973).

Norms are rules for behavior spelling out in various degrees of specificity what a unit must do in order to make an acceptable contribution to the organization. Some of these norms are explicit, codified in organizational documents and made prominent. Others are implicit and, while they may go unrecorded, actively shape patterns of individual and collective behavior. Surveillance refers to actions taken to monitor if and how norm compliance occurs. Surveillance also has formal as well as informal dimensions. Sanctions are actions taken as a result of surveillance activities. If contributions are acceptable or superior, then the organization often provides rewards of comparable symbolic value. Should contributions fall below certain levels various rewards may be withheld, privileges suspended or punishments invoked.

These basic elements, norms, surveillance, and sanctions apply to internal organizational control as well as to societal control of organizations.

The focus of our study of control in schools directs attention to the internal control structure of the school. The internal control structure stresses means more than ends, and particularly implicates the behavior of teachers, the most abundant employee. Furthermore, our interest in the internal control structure of the school centers directly on its official norms and excludes consideration of surveillance and sanctions.

The Control Structure of the School

The basic unit of the school's control structure is the single decision. A decision is the result of a deliberate undertaking. It pertains to an issue and the choice among alternate courses of action. The choice is made by the decision-maker(s) who constitute the input population. The choice is the decision, the selected alternative. Most decisions set, or imply directly, expectations for the behavior of one or more persons. Those whose behavior is so implicated constitute the output population.

The entire series of decisions and their attendant input and output populations are the basic units of the school's control structure.

Pertinent to this study are those decisions with direct implications for the instructional behavior of teachers; that is, where teachers constitute the output population. The main features to be ascertained are identity of the members of the input and output populations and the decision issues. The relation of input and output population members describes the school's control structure.

This perspective leads, in figure 1, to the identification of decision types based on features of the input and output populations. Here each UPPER CASE letter represents a member of the output population. (For our purposes, output members are always and almost exclusively teachers.) Each lower case letter represents a non-member of the output population.

Figure 1: Symbolic Representation of the Control Structure of the Decision

Decision Type	Sample Code Input Population:Output Population
Collegial	ABCD:ABCD
Leader Determined	A:ABCD
Shared	aABCD:ABCD
Removed	a:ABCD

For the collegial decision a case has been represented where all members of the output population are the only persons in the input population. The group (of teachers) rendered a decision for themselves alone. For collegial decisions, population size must equal at least two members and each population must be comprised exactly of the same members. Thus, the codes AB:AB, ABCDEF:ABCDEF, etc. also represent the collegial decision.

The leader determined decision departs importantly from the collegial variety. Here some but not all output population members comprise the input population; thus the descriptor, leader determined. The only other restriction placed on the leader determined decision is that the output population must have at least two members. Otherwise the absolute size of either population is irrelevant. The input side must have at least one fewer member than the output side. (With large populations, 4 or more members, the distinction between leader determined and collegial decisions may seem rather arbitrary. This case does not occur frequently enough to warrant concern.)

The shared decision is distinct from the two prior types in that a, a non-member of the output population, perhaps the school principal or counselor, is also depicted as a member of the input population. The codes aA:A and aABCDEF:ABCDEF are also classified as shared decisions. (In the latter example once again the distinction between the collegial and shared decision might seem rather arbitrary. We think not. Even at such a fine level of discrimination the differences in input populations between the two types constitute an important difference in governance.)

The removed decision is quite distinct from any of the foregoing types. Here no member of the output population participates in the input population. In schools such decisions are often made internally by the principal or central office supervisor and externally by the school board or state powers.

A decision has a control structure when for any member of the output population someone in addition to or other than himself is a member of the input population. There is a fifth type of decision not included in Figure 1 for the reason it has no control structure. It is called discretion and can be represented symbolically as A:A. Here a person constitutes solely both the input and output populations. Discretion departs significantly from the collegial decision in that the decision is not shared with any other person.

To this point it has been indicated that the basic unit of a school's control structure is a single decision, that decisions center around selecting among alternative courses of action regarding an issue, and that for each decision an input population makes the choice and an output population is governed by the choice. Further, it has been indicated that variations in input and output populations and their correspondence reveal five decision types: collegial, leader determined, shared, removed, and discretion.

This depiction of control structure departs from conventional approaches in a few simple but useful ways. First, it is equally applicable in schools that have different governance structures. It is not tied to nor does it beg particular or specialized decision making entities. Second, inclusion of and reference to the identity of output population members in determining decision type describes quite directly the state of centralization/decentralization in a school. Third, in longitudinal studies various vectors of change can be described simultaneously. For example, in schools that adopt a unit formation two alterations are expected; group participation in decision making should increase with a corresponding decrease in teacher discretion.

While it is expected that schools will differ in terms of the prominence of decision types, it is also expected that different issues will call forth varying decision types.

Teacher Task Areas. In order to measure adequately the alterations in school control structure, it was necessary to identify a network of instructional issues about which decisions would be made more or less continuously and deliberately. These issues include decisions of a school-wide or inter-classroom nature as well as those of an intraclassroom nature.

The instructional issues of the school can be adequately described in terms of a variety of teacher task areas. Here teachers are, by necessity, members of the output population. Moreover, some of the task areas touch mainly upon events of a school-wide nature; that is, they involve the control and coordination of interclassroom events, particularly resource and task interdependence. Other task areas are pertinent by and large only to the in-

dividual classroom. Here decisions do not implicate, at least on a short term basis, other classrooms or teachers. Figure 2 displays the various task areas and their school-wide and classroom issues. These task areas were chosen to cover comprehensively the major instructional affairs of the school.

Figure 2 shows, in the left-hand column, 7 teacher task areas. Imbedded in these teacher task areas are instructional issues of a school wide nature, shown in the center column, and instructional issues of a classroom nature, shown in the right-hand column.

Defining the control structure of a school as done here indicates that the measurement device must be capable of determining if a decision has been made about the issues displayed in Figure 2, and, if so, the measurement device must be capable of determining the memberships of the input and output populations.

Control Structure Interview

There are essentially two ways in which a researcher can obtain relatively objective accounts of the identity of the decision-makers. The first is to be present when a decision is rendered and record who participated in selecting the eventual alternative. This approach has its drawbacks. Since decisions are made frequently, the observer must be present on a continuous basis, much like an anthropological field worker. Consequently, when a number of settings are involved the cost of supporting enough field workers soon becomes prohibitive. Short of continuous contact, the observer may appear when many decisions are liable to occur within a short span of time. Often these are official, if not public, events--faculty, committee or board meetings.

Figure 2: Teacher Task Areas Including Their School Wide and Classroom Issues

TEACHER TASK AREA	SCHOOL WIDE ISSUES	CLASSROOM ISSUES
1. SUBJECTS TAUGHT	*Subjects in which lessons are presented on a regular basis.	*Daily lessons.
	*Subjects in which lessons are prohibited.	*Daily subject schedule.
2. TEACHING MATERIALS	*Materials usually found in the school.	*Materials used in the classroom.
	*Materials whose use is prohibited.	
3. METHODS OF INSTRUCTION	*Methods whose use is restricted.	*Methods used in the classroom.
4. METHODS OF REPORTING PUPIL PROGRESS	*Methods used during the year.	*Frequency with which methods are employed.
5. RESPONSES TO MISBEHAVIOR	*Responses whose use is prohibited.	*Responses used.
6. STUDENT GROUPS	*Special class characteristics.	
	*Number of class members.	
	*Grade of class members.	
7. HIRING	*Number of teachers.	
	*Necessary requirements for employment.	
	*Desirable traits in a candidate.	

Observations would be biased against decisions where teachers alone constitute the input population.

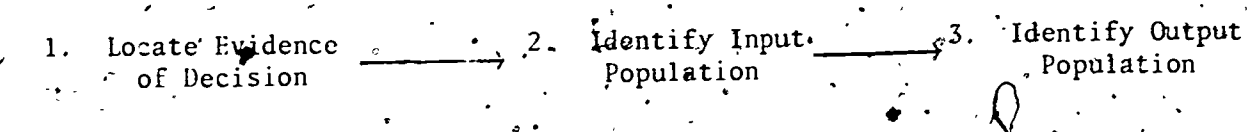
The second approach is to replace the observer with an informant; that is, a regular member of the social system of interest. One qualifies as an informant by being close to the decision makers, if not a decision maker him- or herself and by virtue of sustained membership in the system. If informants can be located, two choices are available to the researcher. On the one hand, the informant can be trained in the skills of recording and reporting observations. On the other hand, the informant can be probed regularly and systematically to elicit the details of his or her knowledge about decision making. The first alternative seems more problemmatic than the second. The costs of training and supervising informants can run very high. Furthermore, it seems unwise to give a key organizational member an intimate account of research purposes and procedures.

The interview which will be described next relies on multiple informants in each school. They are interviewed by trained interviewers from outside the school. In this way costs are kept at a reasonable level and the problems of training, supervision, bias and reactivity are not as great as they would be if the other alternatives had been chosen.

The Structure of the Interview. Data collection departs in two major ways from standard approaches to studies of decision making. The first step of the process is designed to gather evidence to certify which decisions had been made in each particular setting. Once this evidence is secured the interviewer then probes not only to discover who made each decision, but also

whose behavior is governed by the decision--the identity of the input and output populations. Note the following general schema.

Figure 3: Diagram of the Interview Structure



Data are collected in two stages. Evidence obtained by a self-administered questionnaire given prior to the interview. In the interview proper, the interviewer poses a standard series of questions to each informant about the data that were provided. The following summarizes operations in each stage.

Stage One: Evidence. Approximately two weeks prior to the point when an interview is to be held, the interviewer contacts the preselected respondent by phone to explain the purpose of the study and to arrange a time and place for the interview. The interviewer tells the potential respondent that s/he will receive by mail a questionnaire designed to collect certain standard information about the respondent's classroom and school. After achieving cooperation and, mutally agreeable schedules, the interviewer than sends the self-administered questionnaire to the informant.

The questionnaire is designed to tap each teacher task area and each issue within the task area. For example, in the task area "subjects taught" the respondent is shown a list of 25 subjects normally presented in elementary schools. S/he is then instructed to indicate (1) whether s/he has

recently taught any of these or any other subjects and (2) which subjects s/he has been asked not to teach. If the informant indicates s/he teaches math, it is assumed a decision was made that s/he would teach math. If s/he has been asked not to present lessons in sex education, we assume a decision against sex education had been rendered. The absence of affirmative evidence (e.g., something not offered, or not prohibited) does not indicate a deliberate decisional process.

A sample of one section of the self-administered questionnaire is provided in Figure 4. The section shown pertains only to Task Area 1, subjects taught. Other task areas are covered in a similar fashion with other sections of the questionnaire. In the example, only columns 1 and 2 call for informant responses. In the interview, probes are made about the daily content and schedule of lessons (columns 3 and 4) and subjects that are taught (column 1).

Stage Two: Input and Output Populations. Following the completion of the self-administered questionnaire, the interview is held. During this stage the interviewer adheres to the completed copy of the self-administered questionnaire which contains the evidence for the decisions about which probes will be made.

The interviewer goes over each section of the completed questionnaire to assure that it is accurate to the informant's satisfaction. Once done the interviewer begins to probe decisions that lie behind each piece of affirmative evidence. The respondent is given two cards. On the first is a list of locations where decisions pertinent to a particular bit of evidence could be made.[1] On the second is a list of possible, but not exhaustive, in-

[1] Locations on CARD 1 include outside your school, within the administration of your school, within the teaching staff of your school, within yourself.

Figure 4: Sample Section from Self-Administered Questionnaire*

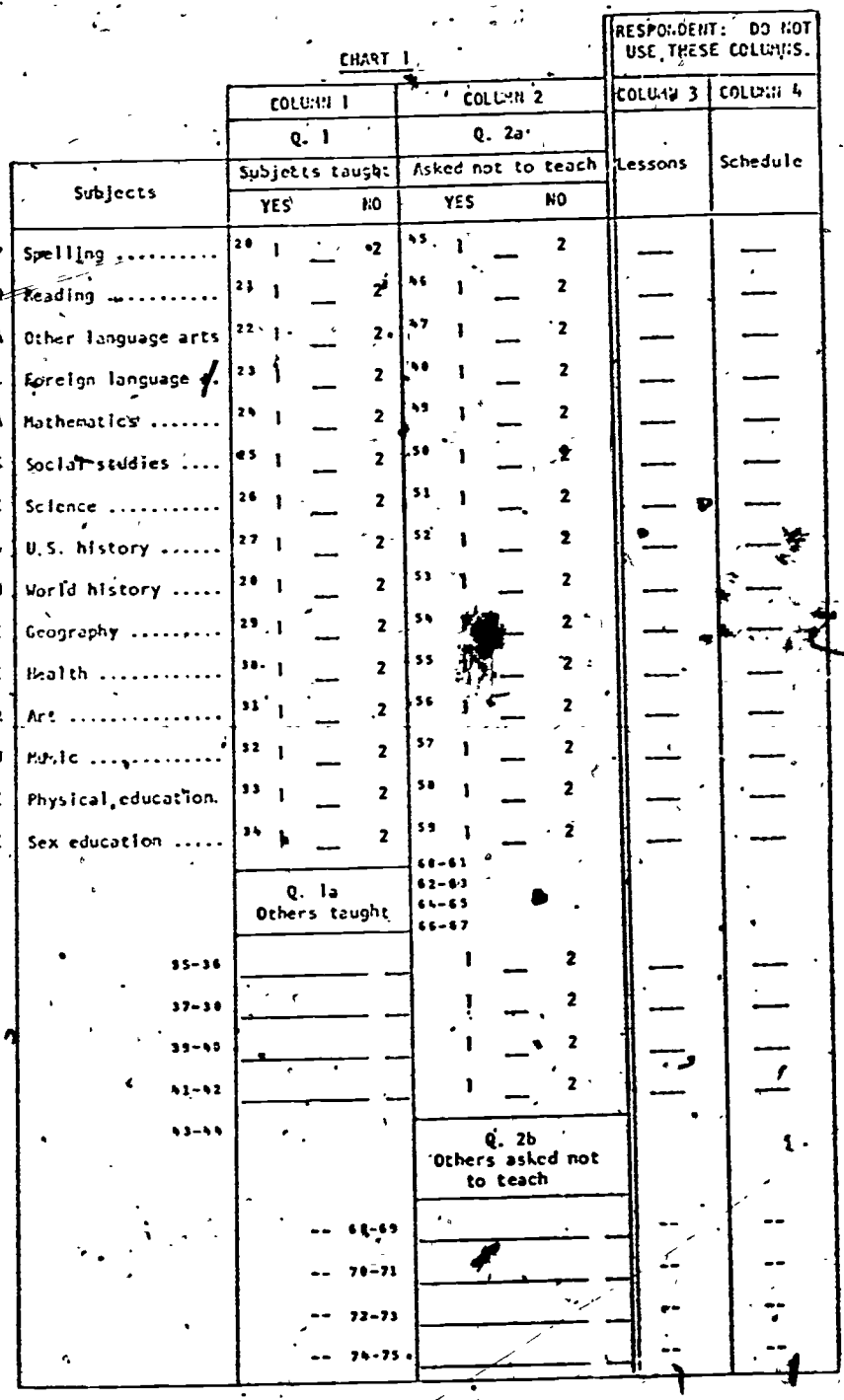


CHART 1

	Subjects	COLUMN 1 Q. 1 Subjects taught: YES	NO	COLUMN 2 Q. 2a Asked not to teach: YES	NO	RESPONDENT: DO NOT USE THESE COLUMNS. COLUMN 3 Lessons	COLUMN 4 Schedule
SP	Spelling	20 1	2	45 1	2		
RD	Reading	21 1	2	46 1	2		
LA	Other language arts	22 1	2	47 1	2		
FL	Foreign language	23 1	2	48 1	2		
MA	Mathematics	24 1	2	49 1	2		
SS	Social studies	25 1	2	50 1	2		
SC	Science	26 1	2	51 1	2		
US	U.S. history	27 1	2	52 1	2		
WH	World history	28 1	2	53 1	2		
GE	Geography	29 1	2	54 1	2		
HE	Health	30 1	2	55 1	2		
AR	Art	31 1	2	56 1	2		
MU	Music	32 1	2	57 1	2		
PE	Physical education	33 1	2	58 1	2		
SE	Sex education	34 1	2	59 1	2		
		Q. 1a Others taught		60-61 62-63 64-65 66-67			
	35-36			1	2		
	37-38			1	2		
	39-40			1	2		
	41-42			1	2		
	43-44			Q. 2b Others asked not to teach			1
		68-69					
		70-71					
		72-73					
		74-75					

*The copy shown in this figure has been photo-reduced for convenience of display.

put (or output) populations.[2] The interviewer then asks about a given bit of evidence (1) where decisions that pertain to it were made--CARD 1, (2) who made each decision--CARD 2 and (3) who was governed by each decision--CARD 2. The interviewer adheres also to a prepared code book which is placed beside the self-administered questionnaire, exposed to the informant and used to record the responses. In the interviewer's code book there are a series of standard questions to be posed about each column of each chart of the self-administered questionnaire (see the sample chart in Figure 4). Thus equivalent data is collected in a highly systematic fashion for each teacher task area.

Questions about the location of a decision (CARD 1) are included for a variety of reasons. By first establishing the locus, both informant and interviewer are alert to certain types of input and output populations. For example, should the informant say the decision was made outside the school and then report it was made by members of the staff, the interviewer would regard these as incompatible facts and probe further into the informant's report. Moreover, location is used in justifying the final codes given during data reduction. Should the locus and population information not correspond, for example, coders may listen to an audio tape copy of the actual interview, if it is available[3], or search for more complete information provided in notes made

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[2]Populations on CARD 2 include a series of out-of-school personnel, your school principal, all teachers in your school, only some teachers in your school, only yourself and others. For final coding these broad categories are further refined to include a broad range of particular positions and groups that might be present in each school and district, e.g., team, team leader, grade-level committee, district committees and so on.

[3]Informants may elect not to have the interview taped.

during the interview. Should each of these procedures fail to explain the apparent incongruity, the interviewer is contacted and, in extreme cases, so is the respondent.

Figure 5 is a copy of a segment of the interviewer's code book used during the interview. This particular sample follows directly column one of chart one, subjects taught, which is displayed in Figure 4.

When an interviewer has completed the full cycle of questions for one complete chart, that is, for one teacher task area, s/he asks "Are there any other important decisions which have been made in (this teacher task area) which you feel we have not covered." Should a decision be uncovered, the entire cycle of probing evidence, locus and population identification is repeated. Accordingly there is a separate code sheet for each of these "loose ends" probes for the various teacher task areas.

Respondent Sample. Two kinds of informants are sought in each school. Teachers who are likely to know who makes what decisions by virtue of their experience, position, tenure, and prestige in the school are preferred over others. The principal of the school is also interviewed due to his rather close proximity to decisions from which teachers are typically further removed. The principal interview and questionnaire are not illustrated here. They differ only insofar as slight modifications of wording are required to direct the principal to consider decision making from a teacher's rather than an administrator's perspective. Additionally, the area of hiring is included only on the principal's survey.

For the first wave of data collection a sample of informants was drawn randomly so that no more than nine teachers and the principal were in-

Figure 5: Sample Section from the Interviewer's Code Book

Chart 1, Column 1

Let's look at decisions about what subjects you have taught.
B: (From CARD 1) Where were decisions made that (SUBJECT) would be taught?
C. (From CARD 2) Who made that decision?
D. (From CARD 2) Who was governed by that decision?
F. Were any other subjects determined in exactly the same way? Which ones?

	A	B	C	D	E	F
	Subjects	Where decision is made (CARD 1)	Who makes decision (CARD 2)	Who is governed (CARD 2)	Specify (CARD 1, Code 6; and CARD 2, Codes 4 & 6)	Others determined the same way
1			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
2			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
3			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
4			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
5			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
6			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
7			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
8			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
9			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		
10			1 2 3 4* 5 6* 7	1 2 3 4* 5 6* 7		

Where decision is made (CARD 1)

1. Outside your own school
2. Within the administration
3. Within teaching staff
4. With self
5. Don't know
6. Others within your own school

Population (CARD 2)

1. Education personnel outside school
2. School principal
3. All teachers in school
4. Some teachers in school*
5. Self
6. Others*
7. Don't know

* SPECIFY WHO IN COLUMN F.

terviewed in each school. This approach was followed due to the lack of information which would identify "best" informants. On subsequent data collections following acquisition of a great deal of information about each of the members of every faculty, a smaller number of teachers was selected largely from the original sample who best fit the informant criteria listed earlier.

Performance Norms. Each teacher informant goes through the entire cycle of questions pertaining to the first six teacher task areas (see Figure 2). During the first data collection total interview time ranged from 40 to 150 minutes. Mean completion time was 75 minutes. Completion time for principals during the first interview ranged from 35 to 155 minutes. Their average was 89. Principals are probed over seven task areas. During the second data collection interview time was shortened considerably for teachers but not for principals.

Completion time has been the greatest practical difficulty with the data gathering procedure. During numerous field trials conducted initially in Oregon and subsequently at the Institute for Survey Research at Temple University, Philadelphia[4], efforts were made to make the interview more efficient without greatly sacrificing the richness of detail it produces. Pruned during this period was a section on determining the contents of pupil progress reports in that respondents could not explain briefly and succinctly how grades and other evaluations were determined.

[4]Concern for the magnitude of the tasks of training and supervising interviewers prompted staff members to subcontract for the data collection and reduction activities with this organization. Project leader there, Dr. James Peterson, also had responsiblity for putting the interview in final form including most pertinently the format of the various protocols.

Effort was made to assess inter-interviewer agreement by having different interviewers probe the same respondent on the same task areas.[5] Inter-interviewer agreement was disappointing in early trials, particularly at the evidence gathering stage, which, in large measure, shapes much of the subsequent interview and resultant data. Interviewers were not, it turned out, especially systematic during this stage and were highly subjective in recording evidence, especially for subjects presented, materials used, and responses to misbehavior. When this stage of the interview became more highly structured inter-interviewer agreement on this and other subsequent sections rose to satisfactory levels.

During the development of the measure, error variance seemed to be tied more to differences among interviewers than among the informants. Considering the massive scale at which data eventually would be collected, systematic, rigorous training and on-the-job supervision of interviewers became the primary concern. Thus, a working agreement was struck with the Institute for Survey Research, ISR.

Under this arrangement, interviewers are recruited from the locale of the schools in which they conduct their interivews. They are trained together both in large groups and on an individual basis. They are supervised not only on the degree to which proper procedures are followed but also on the basis of data they return. In addition, many of the interviews are recorded

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[5]Such efforts were made during the development of the protocols in Eugene. Due to the length of the interview, especially at that stage of development it was not feasible to conduct the entire interview with the same informant two or three times in the same day. Thus a rotation scheme was enacted wherein three interviewers probed in the same four and five informants on a few task areas such that each informant was interviewed twice on the same task area by at least different interviewers.

on audio tapes which are spot checked regularly by field supervisors. Other problems associated with the interviews and interviewers are reported directly to the project offices in Eugene and fed back to ISR. In some cases interviewers have been removed from their duties and replaced with other trained personnel.

Evidence certifying instrument capabilities prior to the collection of "experimental" data was incomplete especially in regard to validity. This shortcoming was due in part to the demands of the data collection schedule. Nonetheless, sufficient modification in instrument format and interviewer training had been made to assure rather high levels of consistency and accuracy. Also, questions of instrument validity could be answered best when considerable information about other school characteristics became available; that is, after the first collection of all data.

These analyses of the control structure data are of the most simple variety. Reported are percentages of decision types. In calculating the values, the total number of decisions reported across all schools or among schools of a given type becomes the denominator of the fraction. The numerator then is the total number of decisions of each decision type. The five basic types of decisions are described in Figure 1 and the discussion surrounding it.

Preliminary Findings

Thirty-six elementary schools in the MITT sample fall into three groups: (1) experimental, those which installed a unit organization in the fall of

1974, (2) control schools that did not install a unit organization and (3) unit, those which had installed a unit organization previously. The unit structure has been shown to produce greater group decision making over both class and school issues.

The first round of control structure data taken in the spring of 1974 was expected to reflect high frequencies of decisions of the type discretion for classroom issues and removed in school-wide issues. But unit schools were expected to exhibit relatively higher frequencies of collegial decisions than their counterparts. More particularly, unit schools should show lower frequencies of discretion in class issues and removed decisions in school issues than the other schools.

The control structure data satisfies these expectations. It should be noted, however, the separation of decisions into classroom and school-wide issues is imperfect and serves, we believe, to depress differences among schools. More fine grained analyses are planned (but not reported here).

Teacher Reports. When aggregating teacher responses from 36 schools over classroom and school issues, 46 percent of the reported decisions are of the type discretion, 30 percent are removed and roughly 10 percent each are collegial and shared. These are shown in Table 1.

Table 1: Control Structure over all Sample Schools

DECISION TYPE	Class and School Issues Combined Percent	Class Issues Only Percent	School Issues Only Percent
Collegial	11	10	13
Leader Determined	03	02	04
Shared	10	06	16
Removed	30	17	47
Discretion	46	65	21

Among classroom decisions, discretion, by a large margin, is the dominant response. Low values on each of the other types also give a much expected picture. The same is true also of decisions reported about school wide issues. Here nearly half the decisions are of the type removed, made by non-teachers. Yet there remains a rather large residual of discretion. This later observation may be exaggerated somewhat by the rough way in which decisions were placed in the school issues category.

These same patterns were repeated, although not at the same levels, among each of the three groups of schools that comprise the total sample. Table 2 contains findings for the control structure of classroom issues by school type.

Table 2: Control of Classroom Issues by School Type

DECISION TYPE	SCHOOL TYPE Experimental Percent	Control Percent	Unit Percent
Collegial	09	06	19
Leader Determined	02	02	02
Shared	05	07	06
Removed	15	20	13
Discretion	69	66	58

As expected, unit schools (those unitized prior to the first wave of data collection) report higher levels of collegial and correspondingly lower levels of discretion decisions than either of the other types. Moreover, the small differences between the experimental and control schools are also suggestive. Higher levels of collegial decisions and lower levels of removed decisions in the experimental schools suggest anticipatory shifts in the control structure may have preceeded the installation effort.

Table 3 presents parallel findings about school wide issues. The unit schools show relatively higher levels of collegial decision making and correspondingly lower levels of decisions of the type removed. The experimental schools again display what may be an anticipatory shift in control structure.

Table 3. Control of School-Wide Affairs by School Type

DECISION TYPE	SCHOOL TYPE Experimental Percent	Control Percent	Unit Percent
Collegial	11	07	21
Leader Determined	04	03	05
Shared	13	20	12
Removed	48	51	42
Discretion	24	19	21

To the extent internal consistency logic applies to a measure of phenomenon of this sort, the correlations between reports of decisions within the five types across classroom and school-wide issues are positive and moderate to large (upper right quadrant of Table 4). The lowest within type, across category correlation is .31 for leader determined decisions and the largest is in the collegial type, .69. The average intercorrelation value is .53.

Within the categories of school and classroom decisions, most intercorrelations should be negative, due to the ipsative nature of the response alternatives. Consistent with earlier consideration, various pairs of decision type categories should show stronger and more systematic relations than others. The first expectation is borne out (upper left and lower right quadrants) for both categories within which decision types fall. The second ex-

Table 4: Partial Correlation Matrix of Decision Types Across Classroom and School Affairs*

	DECISION TYPE										
CLASS AFFAIRS	Collegial	1.	1.00	.18	-.25	-.22	-.48	.69			
	Leader Determined	2.		1.00	.14	-.02	-.42		.31		
	Shared	3.			1.00	-.13	-.23			.66	
	Removed	4.				1.00	-.56				.42
	Discretion	5.					1.00				.58
SCHOOL AFFAIRS	Collegial	6.						11.00	.22	.49	-.48
	Leader Determined	7.							1.00	-.17	-.30
	Shared	8.								1.00	-.20
	Removed	9.									1.00
	Discretion	10.									

*Data from reports of 358 teachers in 41 schools. Five schools do not fit in the experimental, control or unit groups.

pectation also receives some support. For classroom decisions, collegiality is most strongly associated with discretion. Discretion is most strongly associated with removed decisions (upper left quadrant). Among school decisions, collegiality corresponds most prominently with shared and removed decisions. Discretion is most clearly associated with shared decisions (lower right quadrant).

The lower left quadrant is empty due to the generally uninteresting nature of the findings regarding across type, across category correlations. These are a mixture of small and typically negative coefficients which follow roughly the same patterns as found within category reports--upper left and lower right quadrants.

Principal Reports. To this point, control structure data reported in the first wave by principals have been kept separate from the teacher data. Conceivably, reports by the two types of informants should correspond to a high degree. However, there is also good reason to expect deviations to occur. Principals are situated differently in the organization hierarchy than are teachers. By virtue of their position they often come closer than teachers to observing and participating in decisions of a school-wide and district-wide nature. Also, because their role might be seen, in part, as enforcing regulations derived outside of the school and reporting continuously on compliance, their knowledge of decision-makers external to the school and district is probably keener than that of their teachers.

These differences should not affect dramatically the pattern of principal reports when contrasted with the reports of teachers. Generally, principal reports, Table 5, parallel that from teachers. Decisions of the

type removed and discretion occur with greatest frequency when aggregating over all schools and over classroom and school-wide issues. Likewise, discretion dominates classroom decisions and removed dominates school decisions. However, principals report a considerably greater proportion of decisions of the type shared--where teachers and nonteachers render decisions jointly--than do teachers.

Table 5: Control Structure over all Sample Schools

DECISION TYPE	Class and School Issues Combined Percent	Class Issues Only Percent	School Issues Only Percent
Collegial	07	06	09
Leader Determined	02	02	02
Shared	24	23	24
Removed	34	23	49
Discretion	33	45	16

Also similar to teacher reports is the frequency with which principals report instances of collegial decisions. Although the percent of collegial decisions is less here than in Table 1 the pattern of reports is roughly the same. Collegial decisions are more likely to occur, or so it seems, over school-wide than classroom issues.

It is not clear how to account for the major difference between the principal and teacher reports, the frequency of shared decisions. Not only may it stem from slight measurement differences mentioned above but it may also be related to differences in respondent perception, a possibility that will have to be investigated more fully in these and subsequent data.

The differences between and among the experimental, control and unit schools are not nearly as sharp in the principal responses as in the teacher reports. For example, principals in schools with unit organization report higher levels of collegial decisions only over class issues and then not by a large margin. Moreover, principals report lower levels of teacher discretion over school-wide and class issues than teachers. In each case the category of shared decisions is quite pronounced in its role in homogenizing the appearance of the three types of schools and in accounting for the differences between teacher and principal reports.

Differential Changes in Control Structure

Subsequent to the first collection of data two additional rounds were obtained. Wave two data were taken in the fall of 1974 after the 16 experimental schools had installed the unit structure. Wave three data were taken in the spring of 1975 approximately six months following wave two and near the end of the first year during which the experimental schools had maintained the innovation. Data were collected on the same schedule in 13 control schools which are located in the same districts as the experimentals. Two more waves of data will have been taken by the end of the 1975-76 school year.

Somewhat different modes of data analysis have been employed to summarize the reports over three waves. These new analytic techniques give per respondent reports for each school. In addition certain issues in the six teacher task areas were dropped from analysis having netted few responses. Consequently, the percent values do not correspond exactly with those reported in the previous tables. However, the pattern of findings is unchanged.

In comparing the reports of teachers only from the experimental and control schools the following expectations are borne out. Experimental schools show a sharp increase in the frequency of collegial decisions and a corresponding decrease in discretion and removed. The control schools do not change over time. These patterns are even more pronounced when considering only the teacher task areas "subjects taught" and "student groups"--issues that concern the instructional function most centrally.

For purposes of illustration and description the five basic decision types have been altered somewhat and reduced. All decisions in which only teachers are included in the input population are called, by this convention, collegial decisions. These include the standard collegial variety, plus leader determined and those shared decisions in which the outside members of the input population are also teachers. The second or non-collegial decision is comprised of the sum of removed decisions and those shared decisions where some non-teacher belongs to the input population: The third type of decision is the standard, discretion. The percent values of these three types sum to unity and permit the display in Figure 6.

Figure 6 summarizes diagramatically the findings coming from the longitudinal application of the control structure interview. Experimental schools move in the direction of increased collegiality and simultaneously away from non-collegial and discretion decisions. Over time, control schools maintain a pattern of high frequencies of non-collegial and discretion and low amounts of collegial decisions.

Interestingly, the shift to a more collegial control structure in the experimental schools was dramatic. Using time one collegiality as the

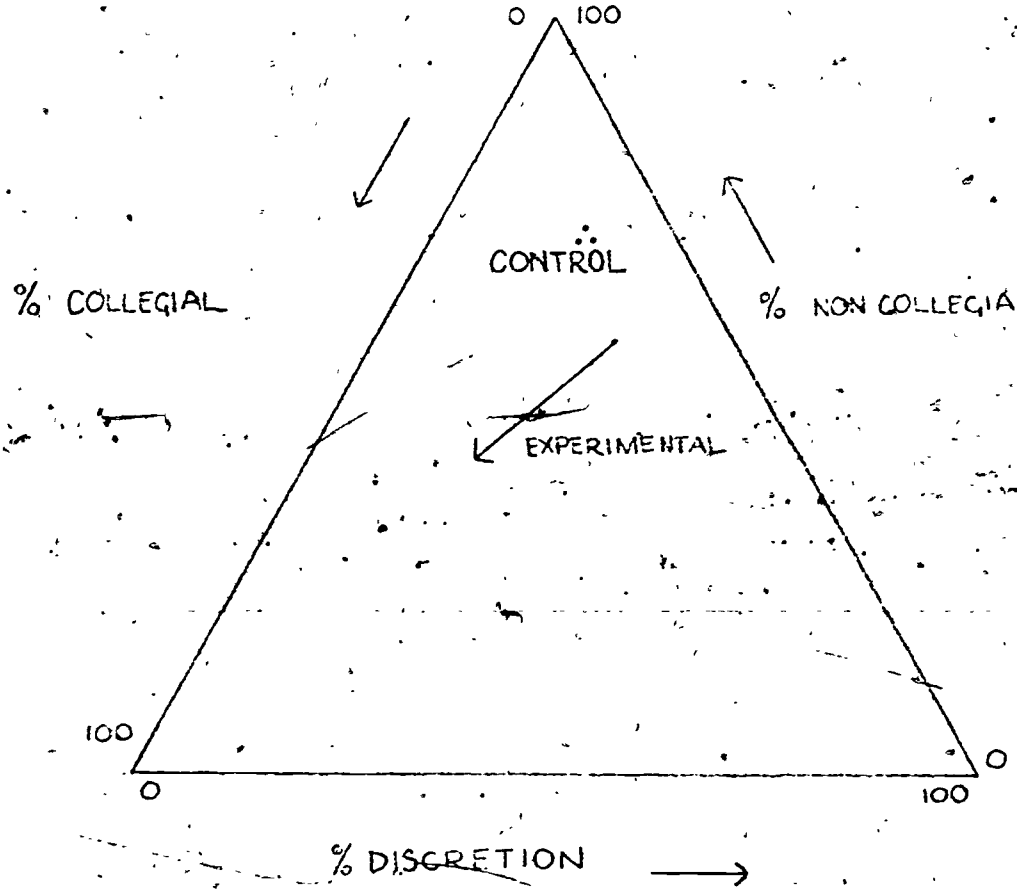

Figure 6: Change in Control Structure Through Time, Experimental vs. Control Schools

covariate, differences between experimental and control schools were significant at time two. However, with time two collegiality as the covariate, school type did not explain more than a trivial amount of the variance at time three. The mean difference between experimental and control schools at times two and three are significant. At each data collection the collegiality percentages over all task areas were: experimental 15.9, 23.5 and 23.2; control 11.7, 10.4 and 10.8. Over the task areas "subject taught" and "student groups" the corresponding values were: experimental, 23.2, 31.2 and 35.0; control 12.6, 9.7 and 10.3.

Remarks

The instrument we have created seems to net valid and reliable data and should considerably illuminate studies of organizational decision-making in the school. In our own work on the organizational implications of a particular structural change in the conventional elementary school, the measure has been among the most sensitive and revealing of the great variety which we employ. Furthermore, the analytic and descriptive modes that we have developed seem to be useful improvements over more conventional approaches that often seem imbued with hortative overtones.

Nevertheless, the procedure has certain drawbacks which may prove prohibitive under normal conditions of research. The procedures are expensive to employ. They require sizable training and supervision costs as well as substantial contact with respondents. Furthermore, the measure produces substantial data which can become nearly overwhelming when multiple sites and time series designs are involved.

These problems notwithstanding, there presently exists no clear alternative when objective and fine grained data are required. Our preliminary analyses that also include a number of subjective measures of organizational decision making do not differentiate among experimental, control and unit schools. Correspondingly, these subjective measures appear to be unrelated to the control structure findings.