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Descriptors-Decision Making, \*Educational Innovation, \*Interpersonal Relationship, Organizational Climate, \*School Systems, Staff Meetings, Teacher Administrator Relationship

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A study examined the relationship between school system innovativeness and selected dimensions of interpersonal behavior in eight Wisconsin school systems. A composite ranking of school system innovativeness was developed from three sources: the district superintendent, the professional staff of the system, and a State Department panel. Selected sections of an instrument designed by the Cooperative Project in Educational Development (COPED) were used to obtain data regarding nine interpersonal behavior (independent) variables related to professional staff perceptions of the principal, the school system interpersonal process norms, and professional staff meetings. Factor analysis, Kendall's Coefficient of Concordance, and Olds' rank order correlation were used in analyzing the data. Those variables that were significant ( $p .05$ ), when taken collectively, suggested that school systems have a measurable social-psychological climate that can enhance or retard the potential for innovativeness. Implications are that changes of climate might be prompted by the utilization of self-diagnostic instruments, inservice training, and the inclusion of human relations courses in preparation programs for teachers and administrators. (Related literature, conclusions, and implications are discussed; copies of the measurement instruments and a 27-item bibliography are included.) (JS)

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Technical Report No. 70

THE RELATIONSHIP OF SCHOOL SYSTEM INNOVATIVENESS TO SELECTED  
DIMENSIONS OF INTERPERSONAL BEHAVIOR IN EIGHT SCHOOL SYSTEMS

By Leo R. Hilfiker

Report from the Models for Planned Educational Change Project  
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January 1969

This report is based on a doctoral dissertation under the supervision of Russell T. Gregg, Professor of Educational Administration.

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## STATEMENT OF FOCUS

The Wisconsin Research and Development Center for Cognitive Learning focuses on contributing to a better understanding of cognitive learning by children and youth and to the improvement of related educational practices. The strategy for research and development is comprehensive. It includes basic research to generate new knowledge about the conditions and processes of learning and about the processes of instruction, and the subsequent development of research-based instructional materials, many of which are designed for use by teachers and others for use by students. These materials are tested and refined in school settings. Throughout these operations behavioral scientists, curriculum experts, academic scholars, and school people interact, insuring that the results of Center activities are based soundly on knowledge of subject matter and cognitive learning and that they are applied to the improvement of educational practice.

This Technical Report is from the Models for Effecting Planned Educational Change Project in Program 3. General objectives of the Program are to develop and test organizations that facilitate research and development activities in the schools and to develop and test the effectiveness of the means whereby schools select, introduce, and utilize the results of research and development. Contributing to these Program objectives, the main objective of the Planned Change Project is to develop and test system-wide mechanisms which local school systems can employ in utilizing knowledge and innovations of the type generated by the Center. Change-agent teams have been organized in area school systems and their effectiveness is being evaluated.

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## ABSTRACT

The general objective of this study was to examine the relationship between school system innovativeness and selected dimensions of interpersonal behavior in eight school systems.

A composite ranking of school system innovativeness was developed for all systems from three distinct sources and was used as a measure of the dependent variable, school system innovativeness. The three sources used were the district superintendent, the professional staff of the system, and a panel of ten experts selected from State Department of Public Instruction personnel who had broad knowledge of each of the school systems.

Selected sections of an instrument designed by the Cooperative Project in Educational Development (COPED) were used to obtain data regarding the interpersonal behavior (independent) variables. These variables were measures of interpersonal relationships as perceived to exist within each school system. Several sections of the COPED instrument were factor analyzed in order to determine more specific variables. The independent variables studied were:

### Professional Staff Perceptions of the Principal

1. Executive Professional Leadership
2. Social Support

### Staff Perceptions of School System Interpersonal Process Norms

3. Openness
4. Trust
5. Adaptiveness

### Staff Perceptions Regarding Professional Staff Meetings

6. Problem-Solving Adequacy of Meetings
7. Satisfaction with the Amount of Time Devoted to Meetings

### Staff Perceptions of School System Interpersonal Process Norms Employed in Staff Meetings

8. Openness
9. Powerlessness

### General

10. System Finance—Expenditure Per Pupil
11. Age of System Personnel

### Major Findings:

The communality and significance of the rankings of school district innovativeness by a panel of experts was computed, through the use of Kendall's Coefficient of Concordance, to be .78, significant at the .01 level. The con-

cordance of the rankings among the three sources (professional personnel, superintendents, and the panel of experts) was .86, significant at the .02 level.

Olds rank order correlation was used for determining the relationships between the dependent and the independent variables. Those independent variables having a significant relationship ( $p < .05$ ) to school system innovativeness were: social support provided by the principal as perceived by the professional personnel (.01), the perceived problem-solving adequacy of staff meetings (.01), satisfaction with the amount of time devoted to problem-solving in staff meetings (.05), perceived powerlessness in system faculty and administrative council meetings combined as a single variable (.01), and openness (.05) and trust (.01) as interpersonal process norms of the system as perceived by professional personnel.

#### Major Conclusions:

An outgrowth of interpersonal relationships is the development of interpersonal process norms within a school system. Certain of these norms were found to be related to the innovativeness of the school systems. Those variables that were significant ( $p < .05$ ), when taken collectively, suggested that school systems have a measurable social-psychological climate that can enhance or retard the potential for innovativeness. The major implication suggested by this study is that the climate of a school system might be changed in order to make the system more receptive to innovation indigenous to the system and/or originating from sources external to the system. Such changes or alterations of climate might be promoted by the utilization of self-diagnostic instruments, inservice training of staff, and the inclusion of human relations courses in preparation programs for teachers and administrators.

## INTRODUCTION

During the last decade, changes have been made and innovations attempted in education at an ever increasing rate. There is no evidence that this trend will reverse. On the contrary, there are indications that changes in society and in education will accelerate. Educational institutions can expect increasing pressure from public sources and from the ranks of professional educators for meaningful change and innovation. Consequently, there appears to be a growing need for less rigidity and a more dynamic and self-renewing posture in education.

If a self-renewing posture is to be achieved, educators will need to experience a greater degree of freedom to take professional risks. Risk-taking, in terms of attempting educational innovations or changing existing practices, is a necessary aspect of a free educational environment. Such an environment is largely human; consequently change efforts need to be directed toward people who are in reality the essential ingredients of the educative community.

In this study the investigator explored some of the variables associated with the human environment in educational organizations in terms of how these variables might be related to the innovativeness of school systems.

Certain terms used throughout the report of the study have relevance to the fields of human relations and sensitivity training. Since these terms are not always found in educational literature, and because their meanings may differ from common usage, their definitions as used in this study are included here.

*School System*—an administrative unit created by the state as the unified area of legal control for the purpose of providing educational opportunities. The terms *target* or *receiving system* refer to a school system which is the recipient of an educational change effort normally initiated by a source external to the system.

*Superintendent*—chief school officer and administrative head of a school system.

*Faculty Meeting*—formally called meeting of the professional personnel at the school building level. *School system faculty meetings* refers to all faculty meetings called within a given school system.

*Problem-Solving Adequacy*—the degree to which meetings are characterized by clarity and control of the meeting agenda, the diagnosis and definition of problems, the generation and discussion of possible solutions, the resolution of problems through decision making, and the implementation and evaluation of action steps. (Adapted from COPED Instrument, see page 21.)

*Interpersonal Transaction*—a unit of social intercourse wherein two or more people relate to one another in a social situation resulting in spoken or nonverbal acknowledgement or communication.

*Process*—that part of group interaction that relates to the feelings, needs, and emotions of members, and the relationships between them, rather than to the objective tasks (content) of the group.

*Interpersonal Process Norms*—implicit standards of interpersonal behavior perceived by members of a group.

*Interpersonal Relationship*—verbal or nonverbal interactions between two or more persons which are given meaning by the mutual value and expectations which the participants have for each other.

*Organizational Climate*—an environmental quality described by the prevailing temper, outlook, attitudes or norms as collectively generated by members of an organization.

*School System Innovativeness*—the degree to which a school system undertakes deliberate, novel, or specific changes, which are thought to be efficacious in accomplishing the goals of the system. Innovations are considered as being willed and planned, rather than occurring hap-

hazardly. (Adapted from Matthew Miles who cooperated in developing the instrument used in this study to measure innovativeness.)

*Executive Professional Leadership (EPL)*—the degree to which teachers perceive the principal as stressing his obligation to improve the quality of staff performance. (Adapted from Gross and Herriott; see page 22.)

*Social Support*—the degree to which teachers perceive the principal as a warm, socially responsive individual who tends to create an empathic and nonthreatening environment. (Adapted from Gross and Herriott; see page 22.)

*Powerlessness*—a quality or state of being devoid of strength, authority or resources to act or influence others.

*Openness*—a quality or state of being characterized by ready accessibility, cooperative attitudes, tolerance of internal change and permissiveness of diversity in social situations.

*Trust*—the degree to which an individual perceives interpersonal relationships as characterized by an assured reliance or confident dependence upon the character, ability, or truthfulness of others.

*Adaptiveness*—the degree to which an individual perceives interpersonal relation-

ships as characterized by a ready capability for modification or changes in social conditions, ways, or environments.

Terms such as trust, openness, adaptiveness, and powerlessness relate to individual feelings and attitudes that may tend to promote an emotional response in the perceiver. This, in turn, may result in a less accurate interpretation of the meanings of the terminology as used in this study. In order to supplement and further clarify the definitions of these four interpersonal process norms a list of connotations for these terms is included below.

*Trust*—credence, confidence, safety, faith, and security *as opposed to* suspicion, skepticism, and disbelief.

*Openness*—unconstraining, accepting, tolerant, nonthreatening, and honest *as opposed to* confining, concealing, and restricting.

*Adaptiveness*—flexible, changeful, adjustable, pliable, and resilient, *as opposed to* rigid, conforming, inflexible, and un-deviating.

*Powerlessness*—uninfluential, ineffective, incapable, and forceless *as opposed to* powerful, forceful, influential, controlling, and self-directed.

## II BACKGROUND AND RELATED LITERATURE

### FORMAL AND INFORMAL ORGANIZATION THEORY

Organizations are an important part of an individual's environment; in the broader context humans spend much of their time and energies working within the confines of organizations. For pupils, teachers, and school administrators the school represents a formal organization that consumes many hours filled with work and leisure.

Organization theory can be divided into two different but related parts, formal and informal. The formal organization provides a structure or framework; the informal organization creates a web of interpersonal and intergroup relationships which can change, strengthen or weaken the formal structure.

Max Weber provided one of the most important statements about bureaucracy and formal organizations. He analyzed formal organizations as a part of his theory of authority structures or systems of legitimate social control. Weber distinguished among three types of authority: traditional, charismatic, and legal-rational. The first is legitimized by the sanctity of tradition; the second is leadership inspired by divine or supernatural powers; the third is legitimized by a belief in the supremacy of a formally established body of social goals.<sup>1</sup> According to Weber almost all administrative organizations are bureaucratic. Weber analyzed bureaucratic organizations not empirically but as an ideal type. He did not characterize the "average" administrative organization; rather, he sought to bring together those characteristics (official duties, hierarchical structure, rules, impersonal orientation, career officials) that were distinctive of this type. Just as a physician might construct a model of the perfectly healthy man, so Weber attempted to characterize a perfectly bureaucratized organization.<sup>2</sup>

Lutz indicated that school organizations are largely bureaucratic in nature:

His [the teacher's] daily work is superintended by superintendents, inspected by inspectors, directed by principals, coordinated by vice-principals, ruled and regulated by the clock and the almanac, and recorded by the registrars in registers. . . . From this perspective the teacher is first and foremost a part of a vast organizational system. The larger and more complex the system becomes, the more the teacher becomes a cog in that organization. It envelops him entirely, and there is no escape.<sup>3</sup>

Another point of view has been provided by Talcott Parsons. His conception of formal organizations was a part of his general social systems framework. He believed that all social systems must solve four basic problems: (1) adaptation or the accommodation of the system to the demands of the environment; (2) goal achievement or the defining of objectives and the mobilization of resources to attain them; (3) integration or establishing a set of relations among the units of the system that will provide some sort of unity; and (4) latency, or the maintenance over a period of time of the system's motivational and cultural patterns.<sup>4</sup>

Clark indicated that the school is

a formal organization with bureaucratic and professional features; a sub-culture, or a set of interrelated sub-cultures of students and faculty; and a series of interactions of teachers and students centered on the formal instruction of the classroom. Within an organization as a whole, or the subculture, or the classroom, socially emergent patterns as well as planned relations condition the educational process.<sup>5</sup>

During the first twenty-five years of this century, considerable study was made of

organizations as machines. This movement was impelled in part by the theoretical concepts reported by Max Weber. The next quarter century was characterized by concern for the "human relations" aspect of organizational study and for social systems theory. These latter movements advanced the proposition that the formal design for living can never completely account for what participants do. Formal organization is always supplemented by what is called the "informal structure" which arises as the individual brings into play his own personality, his special problems and interests."

Selznick stated that

the formal, technical system is never more than a part of the living enterprise we deal with in action. The persons and groups who make it up are not to be treated as manipulable or expendable. As human beings and not mere tools they have their own needs for self-fulfillment—needs that may either sustain the formal system or undermine it.<sup>7</sup>

Blau and Scott pointed out that

in every formal organization there arise informal organizations. The constituent groups of the organization, like all groups, develop their own practices, values, norms, and social relations as their members live and work. . . . Complex networks of social relations and informal status structures emerge, within groups and between them, which are influenced by many factors besides the organization chart.<sup>8</sup>

They pointed out the difficulty of considering formal and informal labels as separate entities and emphasized that

it is impossible to understand the nature of a formal organization without investigating the networks of informal relations and the unofficial norms as well as the formal hierarchy of authority and the official body of rules, since the formally instituted and the informally emerging patterns are inextricably intertwined. . . . the term informal organization does not refer to all types of emergent patterns of social life but only to those that evolve within the framework of a formally established organization.<sup>9</sup>

Barnard defined informal structure as "the aggregate of the personal contacts and inter-

actions and the associated groupings of people" which do not have common or joint purposes, and which are 'indefinite and rather structureless.' Barnard then listed three functions of informal structures in formal organizations: they establish norms of conduct, maintain cohesiveness, and maintain personal integrity.<sup>10</sup>

There is general agreement in the literature that formal organization theories were not entirely adequate to account for the behavior of the individual and of groups who composed the organization. Recognition of the importance of informal organization grew from the Hawthorne Plant study by Koethlisberger and Dickson.<sup>11</sup> This study as well as the research of Elton Mayo led to an increasing awareness of the network of informal relations that developed among workers. Distinct patterns of interaction became apparent. Worker cooperation developed, group cohesiveness increased, productivity was affected and group norms developed.<sup>12</sup> Selznick indicated that the informal organization, as depicted in the Hawthorne study, served several functions:

a) it served to control the behavior of the members of the worker group; b) within the context of the larger organization it was an attempt on the part of the particular group to control the conditions of its existence; c) it acted as a mechanism for the expression of personal relationships for which the formal organization did not provide.<sup>13</sup>

March and Simon stated that

propositions about organizations are statements about human behavior, and imbedded in every such proposition, explicitly or implicitly, is a set of assumptions as to what properties of human beings have to be taken into account to explain their behavior in organizations. . . . An adequate theory of human behavior in organizations will have to take account of the instrumental aspects of human behavior, of the motivational and attitudinal and of the rational.<sup>14</sup>

Argyris indicated that the classical Weberian model of formal organization is changing.

Human beings are need-fulfilling, goal-achieving unities. They create various types of strategies to fulfill their needs and to achieve their goals. One of the most important strategies is to organize themselves. . . . Historically, the most

frequently used strategy seems to be the one which results in a pyramid-shaped structure usually called the "formal organization." There exists now much research to show that this strategy will tend to be modified . . . from one represented by the pyramid shape to one which is much more complex.<sup>1</sup>

Argyris contended that the organization modified the individual's personality and the individual, through informal activities, modified the formal organization. It is in this way that formal and informal organizations become integrated.

There is considerable support in the literature for the view that the relationships of people create an informal organization and that the informal organization has the potential to change the formal structure of an organization. There is increasing awareness that significant and far-reaching changes in an organization will be difficult unless the formal-informal analytical dichotomy is recognized and taken into account.

School systems are often bureaucratic, highly formalized organizational structures and, as such, also may have complex informal structures. Little is known about the power of informal structures in schools, how such structures can be modified to change or improve school systems, or how they can be measured in an accurate and meaningful manner.

## HUMAN RELATIONS IN EDUCATION

Organizational theory as applied to educational organizations has received little attention in professional literature. The same could be said for human relations research in educational organizations although considerable interest has developed in leadership and behavioral studies related to educational administration. Hughes commented upon a problem which may account for this:

. . . all study and investigation in a field involving social phenomena must proceed in the face of certain difficulties. The nature of the educational organization presents an additional difficulty when research which bears upon human relations is commenced. Much of the research in personal relations in educational organizations must be action research. Action research has certain limitations.

By its very nature it tends to be less scientific than pure research.<sup>16</sup>

In an extensive summary of research on teaching, Charters pointed out that the

great preponderance of the empirical research has been restricted to two central relationships of the teacher, the teacher-administrator relationship and the teacher-pupil relationship. . . . Curiously, one of the most significant of the teacher's relationships—the informal colleague relationship—has been virtually ignored in educational research. Nor has the teacher's involvement in the system of social relationships been investigated in many studies, although batteries of relevant concepts, such as power, group norms, communication network, have begun to appear in the discursive, if not the empirical literature of education.<sup>17</sup>

A sociological approach to the study of staff leadership in schools was conducted by Gross and Herriott. They studied several aspects of the behavior of school principals, particularly their efforts to conform to a definition of their role that stresses an obligation to improve the performance of the teachers and to give social support to teachers. Additional problems studied in their project included the principal's role in introducing educational change, teacher morale, teacher involvement, and the interpersonal skills of the principal. In summarizing the implications of their inquiry for further research they stated:

It may be a better heuristic device to focus attention on the dependent variables, for example, on staff morale or worker's productivity, and then ask what ways of conceptualizing leadership offer greatest promise of accounting for their variance. . . . In more general terms, we believe in searching for basic problems, dilemmas, and other stresses and strains on personnel that are indigenous to organizations in general or to particular types and then asking how the response of executives to these problems influence [sic] such variables as moral and productivity.<sup>18</sup>

Some of the most important work in role research has been done by Getzels and Guba.<sup>19</sup> In their theory, social systems are conceived as consisting of two interactive dimensions of human activity, the nomothetic dimension

and the idiographic dimension. A proposition emanating from this general theory relates to conditions which produce psychological tensions within the individual; i.e., the authors see conflict arising when the organizational demands are contrary to an individual's demands or needs. But when role expectations and need-dispositions are congruent a tensionless state, or a state of satisfaction, is presumed to occur.

The degree of staff satisfaction in a school system is a variable within the realm of interpersonal relationships. It is considered as a prime dependent variable by Charters. He indicated that studies of teachers' "morale," "job satisfactions," "annoyances," and "problems" have comprised one of the more vigorous areas of educational research, but with little solid evidence to back the assumption that teacher satisfaction has a significant effect upon the teaching-learning process or upon the proficiency of teachers. He pointed out that there is some evidence available from industrial studies that morale is not necessarily related to productivity.<sup>20</sup>

Halpin stated that "morale is an emotionally charged term that means quite different things to different people. . . . First, whatever it is, it is not a unidimensional concept. . . . Secondly, there is no necessary relationship between high 'morale' and high productivity."<sup>21</sup> Halpin was generally dissatisfied with the use of the term "morale" and with the "sloppy way in which this concept had been used in typical studies of schools and school systems."<sup>22</sup> As a result of this dissatisfaction and because of knowledge gleaned from earlier studies on leadership, he (with Croft) designed an instrument to measure the organizational climate of schools. Through the use of this instrument they sought to identify and describe the dimensions of organizational climate in such a way that the information could be utilized by hospitals, military units, and business corporations as well as schools. Some discussion of the instrument construction and its rationale is relevant to the present study.

The Organizational Climate Description Questionnaire (OCDQ) developed by Halpin and Croft is composed of 64 items which teachers and principals can use to describe the climate of their school. The items pertain to eight subtests and were identified with the subtests by factor-analytic methods. Four of the subtests relate to the faculty as a group and the other four relate to the school principal as a leader. Subtest scores can be used to create a profile which depicts the

school's organizational climate. The eight subtests are:

#### Characteristics of the Group

1. Disengagement
2. Hindrance
3. Esprit
4. Intimacy

#### Behavior of the Leader

5. Aloofness
6. Production Emphasis
7. Thrust
8. Consideration<sup>23</sup>

As a result of early statistical work on the OCDQ, six types of organizational climates were tentatively identified. Open, Autonomous, Controlled, Familiar, Paternal, and Closed. This continuum led the authors to arbitrarily consider Open Climates as "good" or having a positive connotation and Closed Climates having a negative, bad, or unfortunate connotation.

The original OCDQ contained 1000 items which were reduced to 64 items and eight subtests through factor analysis. Two of the four group subtests, and their definitions, have an apparent relationship to the interpersonal relationship variables used in this study:

*Esprit* refers to morale. The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.

*Intimacy* refers to the teachers' enjoyment of friendly social relations with each other. This dimension describes a social-needs satisfaction which is not necessarily associated with task-accomplishment.<sup>24</sup>

The Halpin and Croft subtests labeled as Aloofness, Production, Emphasis, Thrust, and Consideration are defined below in abbreviated form because of their relationship to the "Principal" variables used in this study:

*Aloofness* refers to behavior by the principal which is characterized as formal and impersonal. . . . His behavior, in brief, is universalistic rather than particularistic; nomothetic rather than idiosyncratic. To maintain this style, he keeps himself—at least, "emotionally"—at a distance from his staff.

*Production Emphasis* refers to behavior by the principal which is characterized by close supervision of the staff. . . . His communication tends to go in only one direction, and he is not sensitive to feedback from the staff.

*Thrust* refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization." Thrust behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves any more than he willingly gives of himself, his behavior, though starkly task-oriented, is nonetheless viewed favorably by the teachers.

*Consideration* refers to behavior by the principal which is characterized by an inclination to treat the teachers "humanly," to try to do a little something extra for them in human terms.<sup>25</sup>

Hughes used the OCDQ to describe the organizational climate in highly innovative and in noninnovative school districts in order to explore the relationship of "climate" to innovativeness. He found that innovative districts as a group did reveal a more "open" climate than noninnovative districts.<sup>26</sup> Marcum also used the OCDQ to determine whether differences existed between each of four variables (expenditures, age of staff, years in the school, and number of professional personnel) for the most innovative and the least innovative schools which participated in his study. The study included a comparison of school climates, open and closed, of the participating school systems. He found that innovative schools had open climates, higher expenditures, younger staff members, larger professional staffs, and staff members who remained in the system a shorter period of time.<sup>27</sup>

The concepts of "open" systems, organizational health, and interpersonal relationships were discussed by Bennis. He postulated three criteria for organizational health by comparing it to criteria normally applied to mental health. Bennis indicated that a healthy person (1) actively masters his environment through adaptation, (2) has solved the problem of identity, and (3) is able to perceive the world and himself correctly by reality testing. Of these three criteria Bennis indicated that the "processes of problem-solving—of adaptability—stand out as the

single most important determinant of organizational health and that this adaptability depends on a valid identity and valid reality-testing."<sup>28</sup>

The traditional ways that are employed to measure organizational effectiveness do not adequately reflect the true determinants of organizational health and success. Rather, these criteria yield static time-slices of performance and satisfaction, which may be irrelevant or misleading. These static, discrete measurements do not provide viable measures of health, for they tell us nothing about the processes by which the organization copes with its problems. Therefore, different effectiveness criteria have to be identified, criteria that reveal the processes of problem solving.<sup>29</sup>

School systems have utilized a limited number of means of problem solving, especially below the administrative and supervisory levels. The most common vehicle available for problem solving is probably the professional staff meeting, and this may often be dominated by problems other than those related to the goals of the organization. In addition to problem solving the staff meeting represents a means of communication within the system and a formal setting for interpersonal relationships.

Miles stated his position on organizational health from the standpoint of how effectively an organization is able to cope with its environment. In so doing he listed ten dimensions of organizational health, six of which are included here (in abbreviated form) because of their apparent relationship to the dependent and independent variables used in this study.

1. *Communication adequacy.* Since organizations are not simultaneous face-to-face systems like small groups, the movement of information within them becomes crucial. . . .
2. *Optimal power equalization.* In a healthy organization the distribution of influence is relatively equitable.
3. *Morale.* . . . a summated set of individual sentiments, centering around feelings of well-being, satisfaction, and pleasure, as opposed to feelings of discomfort, unwished-for strain and dissatisfaction. . . .
4. *Innovativeness.* A healthy system would tend to invent new procedures, move toward new goals, produce new

kinds of products, diversify itself, and become more rather than less differentiated over time. . . .

5. *Adaptation*. . . Perhaps inherent in this notion is that the system's ability to bring about corrective change in itself is faster than the change cycle in the surrounding environment.
6. *Problem-solving adequacy*. . . in an effective system, problems are solved with minimal energy; they stay solved; and the problem-solving mechanisms used are not weakened, but maintained or strengthened. . . .<sup>30</sup>

Perhaps the most extensive study in organization variables related to interpersonal relationships has been done by Schutz. As a result of his theoretical framework he concluded that

there are three interpersonal need areas, inclusion, control, and affection, sufficient for the prediction of interpersonal behavior. . . . Every interpersonal relation follows the same general developmental sequence. It starts with inclusion behavior, is followed by control behavior and, finally, affection behavior.<sup>31</sup>

For each of these three need areas he describes several types of behavior: (1) deficient—indicating that the individual is not trying directly to satisfy the need, (2) excessive—indicating that the individual is constantly trying to satisfy the need, (3) ideal—indicating satisfaction of the need, and (4) pathological. The latter indicates an unusually excessive or deviant approach to the satisfaction of a need.

One way of identifying the variables most pertinently related to human relations is to examine common elements contained in definitions of human relations or interpersonal relationships. Griffiths outlined several—two of which are mentioned in the following quotation:

"Human relations" is thus at its present stage of development the practice of a skill by which one learns to relate himself to his social surroundings. It is the way Tom, Dick and Harry learn about themselves and their relations to each other in the first instance and how they improve this understanding in the second instance. "Human relations skill" in particular is the capacity of a person to *communicate* his feelings and ideas

to others, to receive such communications from others, and to respond to their feelings and ideas in such a fashion as to promote *congenial participation in a common task*.

"Human relations" is a way of behaving, of acting or not acting toward human beings in terms of the ideals and value patterns of our democratic society; a way of responding to social situation, and to the individuals and groups which produce these situations; the unity of interacting personalities bound together in an organized relationship in which the characteristic mode of social interaction is determined. . . . by respect for individual personality, and the dignity and worth of human beings.<sup>32</sup>

From related research in education, industry, business and the military, Griffiths derived "topics" which in his view constituted the content of human relations most pertinent to school administration. The nine topics or dimensions are as follows:

1. Motivation
2. Perception
3. Communication
4. Power Structure
5. Authority
6. Morale
7. Group dynamics
8. Decision-making
9. Leadership<sup>33</sup>

Likert created a list of organizational variables which he presented in a business management context. These variables, similar to the nine listed above, were measured across a continuum of four performance characteristics of management systems: (1) exploitive-authoritative, (2) benevolent-authoritative, (3) consultative, and (4) participative group. Likert then arranged his variables into an operational scheme which was divided into causal, intervening, and end-result variables for systems (1), (2), and (4) above. He hypothesized that changes in management style would be reflected in changes in the intervening and end-result variables. This proved to be the case but he noted in reporting his research results that "changes in the causal variables toward system (4) apparently require an appreciable period of time before the impact of the change is fully manifest in corresponding improvement in the end-result variables."<sup>34</sup>

In this section research literature relating to some of the variables pertaining to human

relations in organizations has been reviewed. These variables appear to cluster into three broad categories: those having to do with organizational leadership or administration, those related to organizational interpersonal relations, and those which tend to link the first two categories through formal and informal communications networks.

## CHANGE AND INNOVATION

A great deal of research is currently being generated with respect to educational change and innovation. Some of this research has been oriented toward measuring variables related to the speed with which innovations are initiated and spread. Mort reported that when an innovation had been introduced to meet an educational need, 15 years elapsed before 3% of the nation's school systems had adopted the change.<sup>35</sup> Complete diffusion could take as long as 50 years. Much of Mort's work was done by using variables related to the economic base of the district. Indeed, much of his research dealing with educational innovation had a financial emphasis rather than consideration of innovations as a major dependent variable. His conclusions were that school systems that were first to adopt innovations spent the most money per pupil and, conversely, those systems which were last to adopt innovations spent the least per pupil. Other studies indicated conflicting evidence regarding financial support. A study by Ross supported the view that expenditures made for teachers and instructional supplies was the most important influence on adoptability (adoption of innovations).<sup>36</sup> However, a more recent study by Carlson on expenditures per pupil and the adoption of educational innovations did not support Mort's and Ross's findings. Carlson found that the "mean expenditure level was not related in a consistent manner to the number of innovations adopted."<sup>37</sup>

Carlson's interest was directed primarily toward finding predictors of the rates of innovation, adoption and diffusion. He defined five characteristics of innovations which he felt contributed to the fate of an innovation:

- (1) *Relative advantage* is the degree to which an innovation is superior to ideas it supersedes.
- (2) *Compatibility* is the degree to which an innovation is consistent with existing values and past experience of the adopters.

- (3) *Complexity* is the degree to which an innovation is relatively difficult to use.
- (4) *Divisibility* is the degree to which an innovation may be tried on a limited basis.
- (5) *Communicability* is the degree to which the results of an innovation may be diffused to others.<sup>38</sup>

He asked a panel of judges to rate a given set of innovations according to the innovation characteristics. The rates of diffusion of these same innovations were then compared with the diffusibility ratings on the five characteristics. The results indicated that the varying rates of diffusion of educational innovations are only partially accounted for by the five characteristics of innovations.

Carlson then studied the characteristics of innovators and noninnovators. He found that the following generalizations appear to describe innovators:

1. Innovators generally are young.
2. Innovators have relatively high social status, in terms of amount of education, prestige ratings, and income.
3. Impersonal and cosmopolite sources of information are important to innovators.
4. Innovators are cosmopolite.
5. Innovators exert opinion leadership.
6. Innovators are likely to be viewed as deviants by their peers and by themselves.<sup>39</sup>

He summarized the implications his research may have for school administrators. He indicated that "social characteristics, social relationships, and communication behavior of the members of the school staff undoubtedly relate to the innovativeness of their school system."<sup>40</sup> The implication was that by hiring teachers who appear to fit the innovator pattern, some change might be expected at the school system level. At the same time he indicated that research shows that building principals are key figures in the innovative process.

Gallaher discussed the matter of directed changes and innovation and especially the potential of the school administrator in the role of the advocate. He made a distinction between the term *innovator* which he used to describe the individual or agency responsible for the conception of an innovation, and the term *advocate*, which he used to refer to individuals or agencies who sponsored an

innovation for the express purpose of gaining its acceptance by others. He saw the advocate's role as mainly one of manipulation to gain the acceptance of an innovation. Gallaher expressed strong reservations that the school administrator is the person to whom to assign advocacy functions. Instead, he saw the administrator in a "balancing" role which involved mediating internal conflict or conflict between the system and the community it serves.<sup>41</sup> Such a view takes into account the fact that innovation is only one response that a school system makes to its environment.

According to Pellegrin, role-theory research provided a source of innovation variables in organizational studies. He indicated that certain kinds of behavior, such as innovative behavior, are

expected of incumbents of certain kinds of positions, but not expected of others. Indeed, it is quite possible that the normative expectations associated with any particular positions may encourage stability of behavior rather than creativity or other kinds of innovative activities.<sup>42</sup>

Pellegrin indicated that studies dealing with teacher's roles as innovators at the classroom level have consistently found that teachers are not major innovators because (1) there is a lack of established, institutionalized procedures for disseminating what is gained from innovative effort and (2) pressures for conformity to established procedures are severe; i.e., the teacher is constrained by the environment—both formal and informal—in which he works.<sup>43</sup>

Blau and Scott also stressed the importance and the effects of environment, or group climate, upon the individual. "The group climate or subculture is defined by the values and norms that prevail among group members. It is often asserted that the prevailing group climate influences individual conduct."<sup>44</sup> They pointed out that (1) group climate can change the attitudes of individual members and (2) prevailing attitudes in the group can influence a group member's conduct regardless of his own attitudes.

In a listing of significant variables related to change and innovation, Bhola included the availability of resources and the skills, personnel, material, and influence of both innovators and adopters. At the same time he recognized the importance of environment in combination with other factors. He stated:

Environments within which innovators and adopters exist may multiply the effectiveness of resources or may neutralize them, resulting in expenditure of resources with no gains in diffusion. Environment would, therefore, be another factor in determining the probability of the diffusion event. This incidentally is a factor so far wholly neglected in most innovations models.<sup>45</sup>

Bhola defined the environment as "comprising physical, social and intellectual conditions and forces that impinge continuously on a configuration."<sup>46</sup> In this sense configurations are social units (such as a school system) within which individuals play a variety of formal and informal social roles. In the case of an individual, the environment would range from the most immediate social interactions to the more remote cultural and institutional forces. Bhola suggested that the forces in an environment operating on an innovation may make it a supportive environment, a neutral environment or an inhibiting environment.<sup>47</sup> He defined a supportive environment as one which encouraged initiators to support innovations and target systems to accept them, a neutral environment as one which did not contribute to innovation diffusion one way or the other, and an inhibiting environment as one which did not sanction innovations and made target systems unresponsive to initiators' efforts. He added that supportive environments are not necessarily desirable beyond a certain maximal limit since system stress may produce atypical reasons for the desire for innovations, such as prestige. It is also possible that in an extremely supportive environment an innovation may be discarded and replaced before it has had a chance to produce results.

Analyzing the organization as the receiving configuration, Bhola discussed the matter of system hetero-homogeneity. He believed that a system could be considered homogeneous for the purposes of "formal" acceptance of innovations, but not necessarily for "functional" acceptance of innovations, i.e.,

within institutions and organizations, some individuals may accept an innovation only formally, or minimally or may merely tolerate it... formal innovation adoption is a minimal acceptance; a decision to put on the *act* of adoption without cognitive and attitudinal restructuring necessary for functional acceptance.<sup>48</sup>

This line of thought led Bhola to state that sociopsychological typologies are needed to explain, control, and predict innovation and diffusion with increased refinement.

One of the most extensive treatments of innovation research and theory by a single author was prepared as a conference paper by Bhola.<sup>49</sup> In this report he considered both individuals and organizations as innovators. He indicated that there are a number of variables which may operate at the individual innovator's level:

1. Age of the individual.
2. Social status, prestige, amount of income and education of the individual.
3. Sources of information for the individual.
4. The degree to which individuals exert opinion leadership.
5. An individual's orientation toward the future.
6. An individual's relationship to existing cultural patterns and community norms.
7. Communication behavior of the individual.
8. Capacity of the individual to analyze influential power structure.<sup>50</sup>

While these variables are discussed within the context of the individual innovator, there appears to be considerable difficulty in isolating innovative variables as an exclusive property of the individual. The individual exists in an environment, and in the case of the professional educator this environment is normally structured by social systems, the school organization being one of the most important.

Goodson, in his discussion of the school as a formal organization, indicated that "the assimilation of an innovation into the operating norms of the school must involve authority and power relations which maximize the autonomy of teachers and support their professional judgment."<sup>51</sup> He stated that

for an educational system to improve over a long period of time, it is required that the organization for attending to change, as well as specific innovations themselves, acquire capacities for irreversibility, self-regeneration, and self-correction.<sup>52</sup>

The implication made by Goodson and those who have emphasized the organizational approach is that it is the organization that

processes innovative inputs, recognizing that there are vast differences in a given individual's receptivity and support for a change or innovation. The question of the ways and means by which a specific innovation is supported or resisted by organizational personnel is a vital one. Some of the forces that bear upon organizational change can be identified by utilizing Force Field Analysis developed by Kurt Lewin.<sup>53</sup> Change-agent teams operating at the school system level have applied this technique in attempting to identify positive and negative forces which are perceived as acting upon a proposed innovation.<sup>54</sup> In most cases these forces tend to be perceived as organizational in character rather than individual or interpersonal. Whether this reflects reality or merely the natural reluctance to name persons as negative influences has not been determined.

A few studies have dealt with negative aspects of innovation adoption, i.e., those variables which tend to operate as resistance to change and innovation. Goodwin Watson presented a rationale for resistance to organizational change and homeostasis by comparing it with psychological resistance in the human personality.<sup>55</sup> Furthermore, he associated norms in social systems with habits inculcated in individuals since birth. Both are said to utilize some of the same mechanisms in coping with the forces of change—the illusion of powerlessness, early conditioning, dependence on authority figures, insecurity, and a regression toward old behavior patterns. Watson, in summarizing his views on change, listed a number of principles that can be used to reduce resistance in a system. Some of these principles have to do with adjustments in the psychological set of the receiving system. For example, according to Watson resistance will be less if

1. Participants feel the project is their own—not one devised by outsiders,
2. the project clearly has the whole-hearted support from top officials of the system,
3. the project accords with values and ideals of participants,
4. participants experience acceptance, support, trust, and confidence in their relations with one another,
5. participants feel that their autonomy and security is not threatened.

Klein, in discussing the "defender role," also drew a parallel between Freudian uses of the term *resistance* and the resistance

to change within social systems. He suggested that

as in patient-therapist dyads, opposition to change is also desirable in more complex social systems... what is often considered irrational resistance to change is, in most instances, an attempt to maintain the integrity of the target system in the face of real threat or opposition...<sup>56</sup>

Klein appeared to view the defender role as a force opposing change. He indicated that while this force may use extreme methods in countering change (demagogues and rabble rousers), the prochange forces may use similar techniques. Klein's implication was that the defender role may perform a needed service for the receiving system, that of digesting the innovative input so that it can be absorbed into the system without serious or prolonged organizational disorder.

Goldhammer indicated that in considering various means by which change and innovation can be planned "it is doubtful that any blueprints or formula can be proposed. The probabilities for success must be carefully weighed, and each human situation must be individually analyzed."<sup>57</sup> But this view has not prevented researchers from proposing a number of different strategies for institutionalizing innovations. Authors appear to indicate a preference for the concept of change and innovation as originating from an external source rather than one indigenous to the system. While both viewpoints will be represented in this review, the internal "condition" of the system is explored in somewhat greater detail.

Miles indicated several strategies that might have relevance for the initiation of innovations into a given school system:

1. Strategies initiated by the system, using existing organizational structures.
2. Strategies initiated by the system, using new organizational structures.
3. Strategies initiated by systems external to the local school system, utilizing existing local structures.
4. Strategies initiated by systems external to the local school system, utilizing new (local) structures.<sup>58</sup>

Griffiths stated that since "the tendency of organizations is to maintain a steady state, the major impetus for change will come from the outside rather than inside an organization."<sup>59</sup> Griffiths pointed out that in a study

of elementary school principals those principals who scored higher on organizational change were not aggressive leaders as such, but administrators with a tendency to make changes to please outsiders. March and Simon also took the position that the stimuli to innovation are external. While their studies focused upon business firms, many of the aspects of their organization model also could be applied to school systems.<sup>60</sup> Pellegrin indicated that one

cannot fail to be impressed by the fact that the greatest stimuli to changes in education originate in sources external to the field... the sources of innovation lie largely outside the local community, and in most instances outside the educational profession. Innovations are channeled into the local community from the outside, and their introduction on the local community level depends primarily upon the superintendent.<sup>61</sup>

Attempting to deal with organizational or environmental conditions that are related to change can be extremely complex, but Halpin emphasized that such conditions do exist and may be analogous to a human being as a "receiving system" for innovation.

Anyone who visits more than a few schools notes quickly how schools differ from each other in their "feel." In one school the teachers and the principals are zestful and exude confidence in what they are doing... In a second school the brooding discontent of the teachers is palpable; the principal tries to hide his incompetence and his lack of a sense of direction behind a cloak of authority. ... A third school is marked by neither joy nor despair, but by hollow ritual... And so, too, as one moves to other schools, one finds that each appears to have a "personality" of its own. It is this "personality" that we describe here as the "Organizational Climate" of the school. Analogously, personality is to the individual what Organizational Climate is to the organization.<sup>62</sup>

In 1957 Halpin suggested that a promising approach is to predict events related to changes in organizational maintenance on the bases of the variables identified with the behavior of school administrators. The behavior and role of the school administrator has become the subject of numerous studies in recent

years. Much of this research dealt with administrator behavior in terms of psychological or sociological dimensions. Halpin suggested that social-psychological variables also play an important role in change at the organizational level.

What little research has been done on organizational change suggests that, to be effective, any technique we use must take into full account the irrational element in man, must recognize psychodynamic factors within individual group members as well as within the organization as such, and must reflect—at the level of the organization itself—a pattern of relationship similar to that which obtains between a patient and a psychotherapist.<sup>63</sup>

The patient-psychotherapist analogy also was used by Miner. He indicated that the concept of "organizational character" may be related to change and innovation in school systems in the following words:

The research does demonstrate, then, that school districts develop very disparate organizational characters, and that these characters can be measured and described. Given these facts, it appears evident that studies of the kind conducted can serve as a basis for innovation. Perhaps they are absolutely essential to real change. Certainly a psychotherapist needs to have some knowledge of his patient's personality makeup as a basis for planning a change effort. An analogous diagnostic or descriptive process at the level of the crucial variables may well be a necessary condition for organizational change as well.<sup>64</sup>

The concept of a school system as having personality attributes and a state of health somewhat analogous to the human organism was also supported by Miles. He maintained that

the state of health of an educational organization can tell us more than anything else about the probable success of any particular change effort. Economy of effort would suggest that we should look at the state of an organization's health, as such, and try to improve it—in preference to struggling with a series of more or less inspired short-run change efforts as ends in themselves.<sup>65</sup>

He noted certain phenomena which appear to characterize groups that tend to generate change and innovation:

1. Increased energy devoted to the accomplishment of novel, significant, focused, internalized and shared goals.
2. Effective, controllable procedures for achieving the goals.
3. Esprit de corps, group support, and mutual identification with peers.
4. High autonomy and spontaneity with freedom for creative experimentation, along with norms actively supporting change itself.
5. Higher quality problem-solving via increased communication among participants and fuller use of member resources.
6. Active meeting of members' needs for autonomy, achievement, order, success, and nurturance.
7. High involvement and commitment to decisions followed by group support for implementation. . . .<sup>66</sup>

Miles raised key questions regarding the existing state of a local system and the factors which might accelerate or resist change:

As the innovation begins its movement into the target system, questions must be asked about pre-existing conditions in the system which may facilitate or hinder change. For example: What is the role of the general Zeitgeist in serving as a supporter or blocker of specific changes, or as a creator of generalized openness or resistance to many changes in the system?

And: Are there conditions which might be characterized as making for "ripeness" of the system, a kind of latent disequilibrium which makes subsequent innovations actually welcome? What is the role of the external or internal crisis in making for openness toward innovation? What sorts of factors, whether personal (e.g. cognitive dissonance), interpersonal (e.g. status disequilibrium on the part of significant actors), or organizational (e.g. ambiguity in power structure) make for readiness for the innovation?<sup>67</sup>

These kinds of questions are fundamental to any study on the change process and innovativeness in education. While interest in exploring these questions is becoming more evident, research literature has been virtually

silent on the nature of the organization setting and climate in which innovation takes place.

There appears to be some agreement in the literature that the condition of the receiving system plays an important role in both the resistance and acceptance of changes. The concept of the "condition" of the receiving

system has been described in various ways: organizational health, organizational climate, psychological set, and environmental milieu. Authors who utilize this concept discuss the organization in terms that are commonly used in connection with living organisms—sick or healthy, stable or unstable, creative or non-creative, and rigid or adaptive.

### III THE PROBLEM

The problem to which this study was directed has been discussed in general terms in the preceding sections on innovation and human relations; it is presented here in a more explicit manner. The central question which this study focuses upon is the following: is there a relationship between the selected dimensions of interpersonal behavior in a given school system and system innovativeness? The problem will be discussed in the context of a conceptual framework which involves the major hypothesis and dependent variable. This discussion is followed by a statement of the study hypotheses and ancillary questions.

#### CONCEPTUAL FRAMEWORK

The theory upon which this study is based is rooted in the integration of informal organizational theory and of the theory emerging from research on change and innovation in educational settings. Organizations change over a period of time; the extent of change and the speed with which it occurs may be the result of many variables. Time alone probably is an important factor in change but this study is not concerned with natural or evolutionary change. Instead, the emphasis is directed toward change which takes the form of planned innovations, i.e., positive efforts on the part of school systems as purposeful organizations responsive to the needs and demands of society to progress and improve.

The concept being explored here is that the degree of innovativeness of a school system will depend upon the character and condition of the interpersonal relationships or interpersonal process norms perceived to exist in that system. These relationships and norms are examined at three main loci: the principal, the professional teaching staff, and professional staff meetings as a vehicle for school system problem solving and for the development and integration of collective

interpersonal process norms. These three loci, while distinct, are linked together by social relationships which evolve from a maze of complex interpersonal interactions between and among individuals and groups. Interpersonal interactions form an important part of the social structure of most formal or informal organizations, although there may be considerable differences in the kind and scope of interactions that would be deemed necessary for the accomplishment of organizational goals. In an educational organization interpersonal interactions may vary on a continuum from a minimum of interaction for some personnel to almost constant interaction for others. Berne preferred to call interpersonal interaction transactions or verbal "stroking." One of the arguments presented by Berne was that these transactions, even simple greetings, can be meaningful in both content and process for the persons involved.<sup>68</sup> Such transactions occur daily in school systems—in building hallways, workrooms, teachers' lounges, offices, meeting rooms, etc.

A major premise underlying this study is that transactions between professionals in a school system are influenced and constantly modified by system process norms and that these norms (openness, trust, etc.) operate to maintain or create a psychological climate for change and innovation. The development of such a climate would be altered by the degree of openness, for example, perceived in the system. The question of whether a norm such as openness actually exists is not reviewed here; for the purposes of this study norms are considered real if the personnel of a school system perceive that they exist. A personal process norm such as openness can be measured along a continuum ranging from a perceived high degree (prevalence) to a low degree (absence). The existence of such norms can also be measured on the organizational (system) level.

The norm of openness, for example, could exist as an attitude of an individual or a group.

The attitudes, beliefs, and behavior norms of an inexperienced teacher may be shaped and changed by those of his working group. As pressure is exerted upon such an individual by the group to conform to the "system's way of doing things," the norms of the group can be assimilated and adopted by the individual, or rejected. At the same time it appears that the reverse can be true; individuals with perceived power and status can be expected to alter the norms of a group with varying degrees of success. Leadership in a school system might alter group norms in several ways, such as by training of personnel, personal example, persuasion and influence, charisma, or direct application of perceived power. The foregoing possibilities grossly oversimplify the situation since there are intervening variables which could also affect the climate of the system at any given point in time. An attempt to identify variables that relate to system climate is difficult, often for the same reason that individuals differ in their ability to be sensitive to and to perceive what process norms are being used by a small working group at any given moment.

The development of an adequate theory linking interpersonal relationship variables to organizational innovativeness is lacking. However, Carl Rogers presented a theory which has considerable relevance to the interpersonal relationship variables and concepts used in the present study. Rogers, in a paper describing conditions which should foster creativity or innovativeness, indicated that conditions of creativity cannot be forced but must be permitted to emerge. He outlined two general conditions for maximizing the emergence of constructive creativity, (1) psychological safety and (2) psychological freedom.<sup>69</sup>

### Psychological Safety

The concept of *psychological safety* is related to *trust*. According to Rogers, the attitude of psychological safety will manifest itself when a

teacher, parent, etc. senses the potentialities of the individual and thus is able to have an unconditional faith in him, no matter what his state. The effect on the individual as he apprehends this attitude is to sense a climate of safety.<sup>70</sup>

Additional ways of providing psychological safety are genuine empathy, understanding,

and an absence of external evaluation. The latter (external evaluation) is often perceived by individuals as a threat and creates a need for defensiveness which, in turn, may result in a diminished degree of trust.

### Psychological Freedom

The concept of *psychological freedom* is related to *openness* and, to a lesser degree, *powerlessness*. Rogers defines psychological freedom as permissiveness which "gives the individual complete freedom to think, to feel, to be, whatever is most inward within himself. It fosters the openness . . . which is a part of creativity."<sup>71</sup> This kind of freedom and openness, according to Rogers, fosters the development of a secure locus of evaluation within oneself. To the degree that an internal locus is possible within a given individual or group, a differential feeling of powerlessness (or power) could develop, the explanation being that the further an individual perceives the locus of evaluation removed from himself, the more likely he is to feel powerlessness.

Rogers summarized this theory by stating several hypotheses regarding the fostering of constructive creativity, two of which have relevance for this study.

1. Given two matched groups, the one in which the leader establishes a measurably greater degree of conditions (psychological safety and freedom) will spontaneously form a greater number of creative products, and these products will be judged to be more significantly novel.
2. A group in which conditions (psychological safety and freedom) are established should, according to our theory, have more effective and harmonious interpersonal relationships than a matched group in which these conditions are present to a lesser degree. (The reasoning is that if creativity is all of a piece, then a group in which the fostering conditions are established should be more constructively creative in social relationships.)<sup>72</sup>

### Group and Leadership Relations

A concept expressed in part by Rogers and used in this study is that the interpersonal relationships that develop in a subgroup of the school system (in professional meetings) have an important impact upon the creativity and innovativeness of the members of that

group and possibly of the entire system. In the hypotheses presented by Rogers there is no specification or limitation on the size of the group except whatever practical limitations might arise because of a group's ability to "spontaneously form a greater number of creative products." It would appear that such reasoning could be applicable to several social or working groups throughout a school system, i.e., problem-oriented committees, building faculties, social committees, or the system itself.

Rogers set forth another concept which included leadership as an important factor in the development of a creative group. He indicated that

we know how to establish, in any group, the conditions of leadership which will be followed by personality development in the members of the group. . . . If the leader is acceptant . . . understanding of others in a sensitively empathic way; if he permits and encourages free discussion; if he places responsibility with the group; then there is evidence of personality growth in the members of the group, and the group functions more effectively, with greater creativity and better spirit.<sup>73</sup>

## THE PROBLEM, HYPOTHESES AND ANCILLARY QUESTIONS

Rogers proposed two concepts regarding interpersonal relationships and creativity which have particular relevance for the present study. The first embodies the idea that the climate (conditions) created by a group leader will affect the creative output of the group. The second concept emanates from the first; i.e., if a safe and free climate can be established a group will not only be more creative but will enjoy more effective and harmonious interpersonal relationships.

These concepts appear to have an analogue in most school situations. The principal normally occupies a leadership position with respect to the building faculty. According to the foregoing discussion by Rogers, the creativity of the faculty (group), in terms of the quantity and quality of its innovative products, will be responsive to certain behaviors exhibited by the principal (leader). The behaviors can be used by the principal to establish a psychological climate (conditions) which will enable creativity or innovativeness to emerge and grow. If such a climate can be established, the creativeness

that does emerge will not be restricted solely to tangible products but will also result in more constructively creative social relationships among faculty members. The possibility, implicitly raised by Rogers, is that once such a process is begun and nurtured it could become cyclical and self-reinforcing. It is conceivable that the psychological climate or conditions discussed in this chapter may be initially created or maintained by individuals occupying roles other than that of the principalship or by groups other than building faculty. It may be created deliberately or by chance. The present study focuses upon only one of these possible combinations, the system principals (leaders), the system faculties (groups), and the faculty meetings as a potential locus for the general establishment of psychological conditions thought to be relevant to interpersonal relationships and innovativeness.

Specifically, the questions examined in the present study are stated in the form of null hypotheses and ancillary questions which follow:

1. There is no relationship between school system innovativeness and interpersonal process norms as measured by the degree of adaptiveness, openness, and trust perceived by the professional staff.
2. There is no relationship between school system innovativeness and the executive professional leadership and social support provided by principals as perceived by the professional staff.
3. There is no relationship between school system innovativeness and interpersonal process norms in faculty meetings, as measured by openness and powerlessness as perceived by faculty members.

### Ancillary Questions

- a. Is there a relationship between school system innovativeness and interpersonal process norms in administrative council meetings as measured by openness and powerlessness as perceived by principals?
- b. Is there a relationship between school system innovativeness and the degree of satisfaction with the problem-solving adequacy of professional meetings as perceived by professional personnel?
- c. Is there a relationship between school system innovativeness and the degree of satisfaction with the amount of time devoted to problem solving in professional meetings as perceived by professional personnel?

- d. Is there a relationship between school system innovativeness and expenditures per pupil?
- e. Is there a relationship between school system innovativeness and age of professional personnel?

The ancillary questions are considered as second-order variables which are thought to be related to school system innovativeness. Questions d and e were included in the present study because of previous research reported in Chapter II which indicated that a relationship existed between the age of personnel and innovativeness and also between school district wealth and innovativeness.

The variables in ancillary questions b and c above relate to an aspect of system professional meetings other than existing interpersonal process norms, namely the problem-solving adequacy and the degree of satisfaction

with the amount of time devoted to problem solving as perceived by faculty members. Miles indicated that problem solving is an important factor in the growth and changefulness of organizations and that an effective organization will create well developed means of sensing problems, inventing solutions and implementing them.<sup>74</sup> Bennis concurred with this view. He stated that "rational problem-solving is the only means presently known by which organizations may be rid of persistent intergroup conflict."<sup>75</sup> In this sense problem solving can be conceptually linked to Roger's hypotheses regarding creativity and innovativeness. If a group or organization finds it imperative to utilize its problem-solving mechanisms (such as meetings) to resolve internal conflict and thereby to repeatedly divert its human energies to solving human relations problems, then that group or organization may tend to be less innovative or creative.

## IV DESIGN AND METHODOLOGY

The eight Wisconsin school systems and the adult population included in this study are identical to those used in a comprehensive long-term study of planned change by the R & D Center. The Center, in turn, is affiliated with the Cooperative Project in Educational Development (COPED)<sup>76</sup> which published the package of instruments which were administered in the eight school systems. The instrument sections of the COPED package which were used in the present study appear in Appendix A. The data pertaining to professional personnel were obtained through the use of several selected sections of the COPED instrument package related to the variables used in this study.

### THE SAMPLE

The sampling procedures used were those dictated by the national COPED data requirements; i.e., the selected instrument items were administered to a 30% sample of the total professional personnel in each of the eight participating school systems. Included in this 30% sample were all teachers whose classes were included in the student sample, all principals in the system, and all central office personnel to whom the principals said they reported directly. All other professional personnel (teachers) were sampled randomly to complete the 30% sample. This sample resulted in the following distribution by school systems:

System (Coded)	1	2	3	4	5	6	7	8
Total in Sample	161	59	20	139	34	74	25	111

The sample population in each case varied slightly according to sections of the instrument since garbled, inaccurate or incomplete responses made it necessary to reject some questionnaire items. The questionnaires

were administered after school hours by an R & D Center staff member or by a local volunteer trained by the Center personnel. The superintendent's interview was conducted by a staff member of the R & D Center at the convenience of the superintendent in his office. The interviews followed a formal and structured procedure as outlined by COPED. While the length of the interview lasted from two to three hours, only the portion of the interview instrument section dealing with *Innovations* was analyzed for this study. The *Innovations* section of the interview format is included in Appendix A. The interview technique was used only for the superintendents of the eight participating school systems; all other information was gathered through the use of COPED written instruments.

### THE INSTRUMENT

The COPED Instrument is a collection of questionnaires designed to measure a variety of attitudinal, perceptive, behavioral, and normative social characteristics of professional adults in school systems. It consists of two main parts, each of which is divided into sections. The titles of the various instrument sections are listed in Table 1 and the sections that were utilized to supply data for this study are indicated.

#### Biographical Information

The section of the COPED instrument entitled *Biographical Information* was used to obtain data for the independent variable, the age of respondents by school system. The respondents were asked to indicate their ages by using one of nine possible categories which ranged from 20 to over 60 years of age. The numbers assigned to each age category were summed according to the responses for each school system. This sum was then

Table 1. COPEL Instrument

Instrument Section	Utilized as a Data Source for
<b>Part I</b>	
1. Biographical Information	Ancillary questions
2. Social Structure	Not used
3. School Objectives	Not used
4. Degree of Satisfaction	Not used
5. School Climate	Not used
6. Norms (Do's and Don'ts)	Independent variable
7. Patterns of Relationships	Not used
8. Meetings	Independent variable and ancillary questions
9. Final Reactions	Not used
<b>Part II</b>	
10. Executive Professional Leadership (and Social Support)	Independent variable
11. Influence	Not used
12. Innovations (by teachers)	Dependent variable
13. Reactions to Center Research Team COPEL Instrument (Interview Format) Superintendent Interview	Not used Dependent variable

divided by the total number of responses for each system. The result was utilized as a system mean age category score. School system mean scores were then ranked and correlated with ranks of the school systems on the dependent variable.

#### Norms

This section of the instrument was originally designed by COPEL Instrument Committees to measure individually perceived norms which govern interpersonal relationships with others in an organizational setting (school system). On an a priori basis, certain of the items in this section of the instrument were designated by the COPEL Committee as measures of the following norms:

- a. *Awareness*. Sensitivity to or awareness of what is happening in a situation. Items 1 and 13.
- b. *Authenticity*. Openness about one's feelings and reactions. Items 2, 14, and 25.
- c. *Trust*. The degree to which individuals are both trustworthy and trusting. Items 3, 15, and 27.
- d. *Inquiry*. The degree to which individuals are exploring, skeptical, questioning about things. Items 4 and 16.

- e. *Objectivity*. The degree to which individuals face problems squarely, on their merits, using data as the basis of problem resolution. Items 5 and 17.
- f. *Collaboration*. Relating on an even-status basis, inviting joint work and accepting such invitations from others. Items 6 and 18.
- g. *Changefulness*. Openness to new ways of doing things. Items 7, 19, and 26.
- h. *Altruistic Concern*. Feeling for and with other persons in any encounter. Items 8 and 20.
- i. *Consensual Decision-Making*. Fullest possible use of data from all in making decisions. Items 9 and 21.
- j. *Competence-Based Power*. Influence exerted primarily on the basis of who has knowledge, data, and skill about the problem at hand, other than on organizational position, charisma, etc. Items 10 and 22.
- k. *Emotionality as Data*. The feelings and reactions of self and others in an interpersonal situation considered as legitimate data, to be used in decision-making. Items 11 and 23.
- l. *Individuality*. Valuing [sic] of unusual, deviant, diverse, creative ways of doing things. Items 12 and 24.<sup>77</sup>

In the original version of the COPED instrument, respondents were asked to indicate first their perception of *other's* feelings regarding the norms listed above, then their *own* feelings with regard to the same norms. The present study utilized data regarding only individual respondent's *own* feelings concerning school system norms.

Since the above list of norms as proposed in the Instrument Guide Book had a minimum of previous statistical analysis, the items in the *Norms* section of the instrument were factor analyzed as part of the data analysis for the present study.<sup>78</sup> A total of six factors (Appendix B) emerged from the analysis, but a decision was made arbitrarily to include only those factors which had a factor loading of .30 or better and which had at least four items related to the factor and could be meaningfully identified. This procedure reduced the number of factors to three: openness, 8 instrument items over .30 factor loading; adaptiveness, 4 instrument items over .30 factor loading; trust, 4 instrument items over .30 factor loading. The three factors were defined as follows:

1. Openness—the degree to which an individual perceives interpersonal relationships as being characterized by ready accessibility, cooperative attitude, tolerance of internal change and permissiveness of diversity in social situations.
2. Adaptiveness—the degree to which an individual perceives interpersonal relationships as characterized by a ready capability for modification or changes in social conditions, ways, or environments.
3. Trust—the degree to which an individual perceives interpersonal relationships as characterized by an assured reliance or confident dependence upon the character, ability, or truthfulness of others.

Following factor analysis, the percentage of individuals in a given system who indicated the "correct" response was computed for each of the sixteen items in the analysis. The percentage responses were then summed within each factor (Appendix C) and a mean score computed for each factor by school system. The systems were then ranked according to the mean scores and rank order correlations were computed with the dependent variable (Innovativeness) rank of the school system.

## Meetings

The *Meetings* portion of the COPED Instrument was originally conceived and written to "cover all stages of problem-solving as usually construed, plus several continuing functions (summarizing, process analyzing, participation), plus items dealing with positive and negative meeting climate." A complete listing of items and their purported focus of attention is as follows:

<u>Item content</u>	<u>Instrument Item Number</u>
<u>Problem-solving functions</u>	
Agenda clarity and control	3, 5, 12
Problem definition, diagnosis	1, 4, 15
Solution generation	6, 23
Solution discussion	2, 7
Decision-making resolutions	24, 27, 35, 36
Implementation	11, 18, 30
Follow-up	14, 33
Solution adequacy, productivity	21, 25, 28
<u>Other continuing functions</u>	
Orientation, summarizing	8, 10, 19
Participation, resource utilization	9, 13, 16, 17, 26, 34
Process analysis	20, 29, 31
Climate, sentiments	22, 32, 37

In addition to the above, Items 38 and 39 were developed because an early version of this instrument encountered much commentary from respondents that little or no problem solving went on and that meetings were mainly devoted to announcements, etc. These two items were used to assess the perceived amount of problem solving; the discrepancy between Items 38 and 39 indicates the respondent's degree of satisfaction with the perceived amount.

The data which were obtained by use of the *Meetings* instrument were used to produce the following four distinct measures of the perceived meeting adequacy in a given school system.

1. The degree of *problem-solving adequacy* of system professional meetings of all types.
2. The degree of *satisfaction with the amount of time* devoted to problem solving in system professional meetings of all types.
3. The perceived degree of *openness* as

- a quality of professional staff meetings at two levels:
- a. administrative council meetings
  - b. faculty meetings
4. The perceived degree of *powerlessness* as a quality of professional staff meetings at two levels:
- a. administrative council meetings
  - b. faculty meetings

The methods by which scores were developed for these measures are discussed in the paragraphs below.

**Problem-Solving Adequacy.** Items 1 through 37 from the *Meetings* instrument were scored according to the COPED code manual. Individual scores for these items were summed, a mean score computed for each school system, and a school system rank assigned on the basis of the mean score. A rank order correlation was computed utilizing the school system rank derived from the mean score and the school system rank for the dependent variable, system innovativeness.

**Satisfaction with Time Devoted to Problem Solving.** Problem solving in meetings was defined for respondents as "discussion and decision, working out answers [sic] to problems on the spot." In Items 38 and 39 of the instrument respondents were asked to indicate the percentage of time *actually spent* and the percentage of time that *ought to be spent* on problem solving during professional meetings of all types. The size of the absolute difference between these percentages was considered to be a measure of the perceived degree of satisfaction with the perceived amount of time devoted to problem solving in professional meetings of all types; the greater the size differential, the greater the amount of dissatisfaction. These percentages of absolute differences were totaled for all individuals in each school system and a school system rank assigned on the basis of the mean score. A rank order correlation was computed utilizing the school system rankings derived from the mean score and the school system rankings for the dependent variable, system innovativeness.

**Degree of Openness and Powerlessness in Meetings.** In order to determine specific factors that the *Meetings* instrument was measuring a factor analysis of the responses to instrument Items 1 through 37 was undertaken.<sup>80</sup> The results of that analysis appear in Appendix D. Factor loadings clustered into four independent

groups, two with heavy loadings and two with loadings judged to be inadequate for utilization in this study. A study of the items connected with factor loadings of .50 or higher resulted in naming the factors *openness* (8 items) and *powerlessness* (14 items). The individual scores for each item were totaled by school system and a system mean score for each of the two factors was computed. The school system mean scores were then ranked. Rank order correlations were computed utilizing the ranks derived from the mean scores for *powerlessness* and *openness* and the rank on the dependent variable, system innovativeness. Powerlessness is considered here as a perception internalized as being real for a given individual, whether it is in fact real or imagined. Consequently, perceptions of powerlessness as expressed in the *Meetings* instrument are considered to be real for the individual respondent. Openness was considered an environmental rather than a personal characteristic, a collective social climate rather than an individual aura.

Scores for the *Meetings* instrument variables, *problem solving adequacy* and *satisfaction with the amount of time devoted to problem solving*, were analyzed for all professional meetings in the system. Scores for the two variables which resulted from a factor analysis of the *Meetings* instrument (*openness* and *powerlessness*) were analyzed separately for two levels of meetings, administrative council meetings and faculty meetings. The rationale for this procedure was based upon a need for greater specificity than was evident from the gross measures related to problem solving. When analyzing factors that describe a quality of social climate perceived to exist between and among persons attending a meeting, a point of diminishing return is reached as the analysis tends to increase in specificity; but it was judged that the inclusion in this study of both gross and specific measures can be of value in analyzing group process in professional meetings.

#### **Executive Professional Leadership and Social Support**

This section of the COPED instrument was designed by Gross and Herriott to measure the Executive Professional Leadership (EPL) and Social and Managerial Support in public school systems at three levels; coordinators, principals, and the immediate superior to the principal.<sup>81</sup> The present study includes only EPL and Social Support provided by the principal

as perceived by the professional staff served by him. Perceptions by principals and coordinators-specialists were not included in this study since the smaller school systems did not provide a sufficient number of such personnel. The definitions of the variables used for this portion of the study are given in the first section of this paper.

The Teachers Form of the COPED instrument entitled "Your Principal" contains items purported to measure EPL and Social Support. Respondent scores for items related to the two variables were summed by school system and mean scores were computed. School system mean scores were then ranked and correlated with ranks of the school systems on the dependent variable (Innovativeness).

### THE DEPENDENT VARIABLE: SCHOOL SYSTEM INNOVATIVENESS

The dependent variable used in this study was school system innovativeness, determined by utilizing three separate procedures. The first was a ranking of the innovativeness of school systems participating in the study by a panel of ten experts. The second was a ranking derived from a quantitative accounting of innovations by professional personnel of the school system with the exception of the system superintendent. The third was a ranking derived from information procured during a comprehensive, structured interview with the superintendent of the school system. These three ranks were combined into a composite ranking which was used as the data for the dependent variable. As the dependent variable, system innovativeness was rank correlated with all independent variables used in this study.

#### The Expert Panel

This section will describe the procedures used in selecting the expert panel and computation of the final school system ranking by the expert panel. Questionnaires, criteria, and rankings appear in Appendix E. The selection of the panel began with the writer choosing five members of the Wisconsin Department of Public Instruction (DPI) who were known to have broad knowledge of Wisconsin school systems. It was, therefore, preferable to choose members not assigned specific geo-

graphic areas throughout the state but "generalists" who had varied experiences with many representatives of school systems including school board members, superintendents, central office personnel, and teachers.

The initial group of five experts was asked to fill out a School System *Innovativeness Questionnaire* ranking the eight school systems that had agreed to participate in the study on their relative innovativeness as systems. A definition of system innovativeness was provided as a general guideline for their ranking. Included with the *Innovativeness Questionnaire* was a second questionnaire which solicited the opinion of the members of the original group of five as to which of fifty DPI members would be best qualified to rank the innovativeness of the eight school systems. Seven of the 50 DPI members received the greatest number of "high" choices. Two of the seven were already members of the original group of five experts; the remaining five were then requested by the writer to respond to the *Innovativeness Questionnaire*. This resulted in a total of ten experts who responded to the *Innovativeness Questionnaire*.

Because of the degree of agreement in the rankings by the expert panel, two research questions became evident: What criteria did the ten respondents use when they made their judgments? If the expert panel were asked to rank the same schools at a later date, to what extent would their two rankings agree?

A follow-up letter was sent to the ten expert panel members requesting that each of them state the criteria that he used when he originally ranked the eight school systems on their relative innovativeness. Seven of the ten panel members responded, indicating criteria that varied widely in content and style. Because of the wide variance in the replies furnished by respondents, the criteria were summarized and synthesized with criteria found in the literature which was thought to be related to innovativeness.

On the basis of this summary, a final questionnaire requesting a ranking of the eight school systems on each of eight specific criteria of innovativeness was developed and submitted to the original panel members. The primary purpose of the second questionnaire, sent six months after the original rankings had been made, was to check the reliability of the first and to furnish data regarding what individual or collective variance might exist among the various criteria. All ten experts returned the final questionnaire with their rankings of the eight school systems.

Table 2. Comparison of Original and Final Ranking by Experts

School System	1	2	3	4	5	6	7	8
1. Summary of Original Ranking <sup>a</sup>	5	3.5	3.5	2	7	1	8	6
2. Summary of Final Ranking (6 months later) <sup>b</sup>	5	3	4	2	7	1	8	6
Olds $r^1 = .994$ $P = .003$ (Sig. at .01 level)								

<sup>a</sup>From Appendix J

<sup>b</sup>From Appendix N

A comparison of the original and final expert rankings is shown in Table 2. The data indicate a rank order correlation of .994, significant at the .01 level. The final ranking was used, in preference to the original, for all subsequent computations since no tie rankings existed.

#### School System Superintendents

A second means of obtaining data regarding the innovativeness of a school system was an extensive structured interview with the school system superintendent. In all eight participating systems, this person was the chief school officer of the entire district (school system) and reported directly to the local board of education. The entire interview lasted from two to three hours, but only a portion of that time was devoted to gathering information regarding innovations.

During the interview, the superintendent was given a list of 20 innovative practices with a description of each practice. For each of these practices, the interviewer completed a standard form (Appendix A). If the superintendent had not heard of the practice, no further questions were asked. If the superintendent indicated that the practice was in use, he was asked to furnish more detailed information regarding when it was tried and whether he considered it a routine, trial, or small-scale practice. These responses were given weighted scores ranging from one to six based upon the degree of penetration and utilization of a given practice within the system. Appendix F indicates the scores assigned to each system for each of the innovations, describing the extent to which the practice was used in the system. These scores were summed and

ranked by school system providing the second of three ranks which made up the composite rank for school system innovativeness.

#### School System Professional Staff

The professional staff members included in the sampling procedure previously described were asked to complete a questionnaire in regard to the number of innovations that were being used in the system. The list of innovations and their descriptions was identical to that used in the superintendent's interview described above. For each innovation the respondents were asked to indicate to the best of their knowledge whether a given practice was to be found in the system. Three responses were possible: *yes*, it is being used in the system; *no*, it is not being used; and *not sure*. If over 50% of the professional staff indicated that a given practice was used in the system the percentage listed for that particular innovation was used in the computations as described below. If 50% or less indicated a given practice was being used, the practice was not included in the professional personnel summary rank. This procedure was utilized when it became apparent that the superintendent's responses and those of professional personnel in the same system did not agree; for example, 41% of the professional staff of System 8 indicated that multigraded classes were being used in that system, whereas the superintendent indicated that the practice was not in use. The percentage of professional staff members who indicated that they knew an innovative practice was being used in the system ranged from 0 to 100% for the list of 20 innovations. Those percentages above 50% were summed and the totals ranked (Appendix F)

Table 3. Determination of the Composite Rank: Innovativeness of Eight School Systems

School System	1	2	3	4	5	6	7	8
1. Expert Rank	5	3	4	2	7	1	8	6
2. Superintendent Rank	5	1	3	2	7	6	8	4
3. Professional Personnel Rank	6	1	3	2	7	4	8	5
Rank Sum	16	5	10	6	21	11	24	15
Composite Rank	6	1	3	2	7	4	8	5

by school system. This procedure was selected over other alternatives such as transforming percentages into scores and subtracting the scores from a constant or assigning a weighted value to the various percentages. It was judged that such procedures would not result in improved accuracy in the determination of the rankings.

#### Formulation of the Composite Ranking

The three methods used in the present study for determining the comparative innovativeness of eight school systems have been discussed above. These methods resulted in a ranking of each of the school systems according to expert opinion, the school system superintendent, and the sample of the professional staff members. The rankings from these three sources were summed and the totals ranked (Table 3). The last ranking is referred to throughout the present study as the composite ranking and was utilized as a measure for the dependent variable, school system innovativeness.

Kendall's coefficient of concordance formula was used in those instances where rankings that were being compared numbered more than two. The first use of the formula was to test the communality of judgment of the panel of ten experts who ranked the eight participating school systems on their comparative innovativeness. Kendall's formula results in

a coefficient of concordance (W) which ranges in value from 0 to 1.<sup>82</sup>

$$W = \frac{12S}{m^2(n^3 - n)}$$

where S = sum of squares of actual deviations  
 m = number of rankings (10 experts)  
 n = number of objects ranked (8 schools).

The coefficient of concordance (W) of the 10 expert panelists was .782. A test of significance formula was used for instances of  $n > 7$ :<sup>83</sup>

$$\chi_r^2 = m(n - 1)W = \frac{S}{\frac{1}{12}mn(n + 1)} + 54.73$$

v degrees of freedom =  $n - 1 = 7$ .

The value for  $\chi^2$  was significant at the .01 level which is interpreted to mean that the probability of the rankings of the expert panel occurring by chance would be less than 1 in 100.

The same formula was used to determine the degree of communality of the three ranks used for the dependent variable. The results of that computation were as follow:

Kendall's Concordance (W) = .86,  
 $\chi^2 = 18.0$ , which was significant at the .02 level.

V  
FINDINGS OF THE STUDY

### FINDINGS RELATED TO THE HYPOTHESES

In the treatment of rankings associated with the independent variables, Spearman's rank order correlation formula was used.

$$\text{Rank Correlation } (r) = 1 - \frac{6 \sum d^2}{n^3 - n}$$

where  $n$  is the number of individuals or items ranked and  $d$  is the rank difference for the  $i^{\text{th}}$  individual.<sup>84</sup> Probability levels ( $P$ ) were determined through the use of tables formulated by Olds. In the case of rank correlation between two sets of ranks, the value for  $r$  ranges between  $-1$  and  $+1$  as opposed to a range of  $0$  to  $1.00$  for Kendall's Coefficient of Concordance. The interpretation of the degree of significance remains the same; i.e.,  $P$  indicates the probability the ranking could occur by chance.

In this section each of the hypotheses will be stated, followed by a discussion of the findings appropriate to the particular hypothesis. The discussion will be supplemented by a table containing the data on which each major finding is based.

**Hypothesis 1.** There is no relationship between school system innovativeness and interpersonal process norms as measured by the degree of adaptiveness, openness, and trust perceived by the professional staff.

Three factors emerged as a result of a factor analysis of the norms section of the COPED instrument: adaptiveness, openness, and trust. Mean scores were developed, by school system, for each of these three norms. The process by which these scores were developed was described in Chapter IV.

**Adaptiveness.** The mean scores of the eight school systems for the interpersonal process norm of adaptiveness ranged from  $54.0$  to  $69.7$ . The systems were ranked on the

norms of adaptiveness according to the mean scores for that norm. The rankings for the norms of adaptiveness were then correlated with the rankings for the dependent variable, school system innovativeness. The findings (Table 4) indicate a rank order correlation of  $.203$ , not significant at the  $.05$  level. This correlation indicated that any relationship between the ranking of school system innovativeness and the rank of the interpersonal process norm adaptiveness could be attributed to chance.

**Openness.** The interpersonal process norm of openness was treated in the same manner as that of adaptiveness. The mean scores for the eight school systems ranged from  $54.0$  to  $65.2$ . These scores were ranked by school system and correlated with the dependent variable ranking.

The findings reported in Table 5 indicate a rank order correlation of  $.786$ , significant at the  $.05$  level. The data indicate that a relationship exists between school system openness as perceived by the professional staff and school system innovativeness.

**Trust.** The mean scores for the interpersonal process norm of trust were developed in the same manner as those for the norms of adaptiveness and openness. The mean scores for trust in the eight school systems ranged from  $70.0$  to  $80.5$ . It should be noted that the mean score values cannot be compared between norms. For example, the fact that System 3 has a mean score of  $80.5$  for the norm of trust, but a mean score of only  $65.2$  for the norm of openness has no relevance for the present study.

The eight systems were ranked on the norm of trust according to the mean scores for that norm. The rankings for the norm of trust were then correlated with the rankings on the dependent variable of school system innovativeness. The findings reported in Table 6 indicate a rank order correlation of  $.905$ , significant at the  $.01$  level.

Table 4. Relationship of Adaptiveness as Perceived by Professional Staff to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	154	55	18	131	32	69	24	106
Adaptiveness Mean Score	65.7	62.0	69.7	58.5	62.0	63.0	54.0	61.0
Adaptiveness Score Rank	2	5	1	7	5	3	8	6
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .203		p < .33						

Table 5. Relationship of Openness as Perceived by Professional Staff to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	154	55	18	131	32	69	24	106
Openness Mean Score	58.2	59.2	65.2	60.3	54.0	58.7	56.7	55.8
Openness Score Rank	5	3	1	2	8	4	6	7
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .786		p < .02						

Table 6. Relationship of Trust as Perceived by Professional Staff to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	154	55	18	131	32	69	24	106
Trust Mean Score	72.7	79.5	80.5	79.0	73.0	77.5	70.0	74.5
Trust Score Rank	7	2	1	3	6	4	8	5
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .786		p < .01						

**Hypothesis 2.** There is no relationship between school system innovativeness and the executive professional leadership and social support provided by principals as perceived by the professional staff.

The instrument section entitled "Your Principal" contained 24 items. Items 1 through 12 provided measures for Executive Professional Leadership and Items 19 through 24 provided measures for social support.<sup>55</sup>

**Executive Professional Leadership.** Mean scores for the EPL Instrument section ranged from 1.068 (System 7) to 2.705 (System 3). These scores were ranked by school system and correlated with the rankings of the school systems on the dependent variable of innovativeness. The findings reported in Table 7 indicate a rank order correlation of .524, not significant at the .05 level. The correlation is significant at the .10 level which is regarded only as a suggestive finding which may be worthy of further exploration.

**Social Support.** The social support variable was treated in the same manner as the EPL variable. The mean scores for the social support variable ranged from 1.892 (System 5) to 3.068 (System 2). These scores were ranked by school system and correlated with the dependent variable ranking. As reported in Table 8, a rank order correlation of .952 significant at the .01 level was obtained. A strong relationship between the rankings of school system innovativeness and the rankings of the social support variable was indicated by this correlation.

**Hypothesis 3.** There is no relationship between school system innovativeness and interpersonal process norms in faculty meetings, as measured by openness and powerlessness as perceived by faculty members.

The interpersonal process norms of openness and powerlessness as measured by the COPED instrument resulted from a factor analysis of the data from the Meetings section of the instrument. The factor analysis was discussed in Chapter IV. The individual responses to the items of the instrument which were related to norms of openness and powerlessness were scored and a mean score developed for each school system.

**Openness in building faculty meetings.** The mean scores for openness in faculty meetings ranged from 3.44 to 4.26. These scores were ranked by school system and correlated with rankings of the school systems on the dependent variable of innovativeness. The data reported in Table 9 indicate a rank order correlation of .095, not significant at the .05 level.

**Powerlessness in building faculty meetings.** The rationale for the rankings of the variable powerlessness, which is implicit in Hypothesis 3 and Ancillary Question a, is that school system personnel who perceive themselves as being powerless in professional meetings will collectively exhibit a lower level of innovativeness. The mean scores for the norm of powerlessness, as perceived to exist in faculty meetings, ranged from 3.56 to 4.21. In interpreting the mean scores listed in Table 10, it should be noted that the highest mean score indicates the least degree of perceived powerlessness. This arrangement of mean scores was the result of the method by which responses to instrument items were scored for the variable of powerlessness. The Meetings section of the COPED instrument contained a total of 37 questionnaire items. Of this number, 15 were scored positively (most "correct" response was coded 6 on a six-point scale), and 22 items were scored negatively (most "correct" response was coded 1 on a six-point scale). Twelve of the 14 items in the Meetings Instrument which were utilized for the measurement of the variable powerlessness were scored on a negative scale basis. Therefore, a response coded as "one" on a six-point scale represented the greatest degree of powerlessness, and a response of "six" the least degree of powerlessness.<sup>86</sup> The mean scores for the norm of powerlessness were ranked by school system and correlated with the dependent variable ranking. The data reported in Table 10 indicate a rank order correlation of .453, not significant at the .05 level.

## FINDINGS RELATED TO THE ANCILLARY QUESTIONS

The following section contains a statement of each of the Ancillary Questions a through e. Following each statement of the Ancillary Question is a discussion of the findings and a table which contains a summary of the data related to the particular question.

Table 7. Relationship of Executive Professional Leadership of Principals as Perceived by Teachers to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	130	44	17	111	28	57	18	85
EPL Mean Score	1.561	1.363	2.705	2.081	1.107	1.684	1.058	2.282
EPL Score Rank	5	6	1	3	7	4	8	2
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .524		p = .10						

Table 8. Relationship of Social Support of Principals as Perceived by Teachers to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	130	44	17	111	28	57	18	85
Social Support Mean Score	2.138	3.068	2.941	3.054	1.892	2.701	2.117	2.788
Social Support Score Rank	6	1	3	2	8	5	7	4
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .952		p < .002						

Table 9. Relationship of Openness in Building Faculty Meetings to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	114	37	10	58	21	45	17	67
Openness Mean Score	3.85	4.11	3.75	4.16	3.44	4.13	4.26	4.04
Openness Rank	6	4	7	2	8	3	1	5
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .095		p < .43						

Table 10. Relationship of Powerlessness in Building Faculty Meetings to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	114	37	10	58	21	45	17	67
Powerlessness Mean Score	3.73	3.97	3.56	4.21	3.67	3.78	3.68	3.59
Powerlessness Rank	4	2	8	1	6	3	5	7
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .453		p < .14						

**Ancillary Question a.** Is there a relationship between school system innovativeness and interpersonal process norms in administrative council meetings as measured by openness and powerlessness as perceived by principals?

The treatment of data relating to the interpersonal process norms in system administrative council meetings as measured by openness and powerlessness as perceived by principals was identical to that used for the building faculty meetings described above. Mean scores for openness and powerlessness were developed by school system from respondents' raw scores. The mean scores ranged from 4.24 to 5.87 for openness and from 3.52 to 4.81 for powerlessness. The data contained in Table 11 indicated a rank order correlation of .048 for the norm of openness which was not significant at the .05 level. The data contained in Table 12 indicated a rank order correlation of .929 for the norm of powerlessness which was significant at the .01 level.

Caution must be used in the interpretation of the data contained in Tables 11 and 12 since the number of respondents in each of the school systems was exceedingly small. The number of respondents ranged from 1 in System 7 to 17 in System 1.

Because of the problem of an inadequate sample alluded to above, the data for administrative council meetings and building faculty meetings were combined. This was done by summing the mean scores of the administrative council meetings and the building faculty meetings by school system for each of the norms of openness and powerlessness. While the results of this analysis did not relate directly to any hypothesis, they were judged relevant to the present study. The results are reported in Tables 13 and 14.

The combined mean scores for the norm of openness were ranked from the highest score of 10.13 in System 7 to the lowest score of 7.73 in System 5. The rankings for the norm of openness were then correlated with the rankings on the dependent variable of school system innovativeness. The findings reported in Table 13 indicate a rank order correlation of .167, not significant at the .05 level.

The combined mean scores for the norm of powerlessness ranked from the highest (least degree of powerlessness) score of 8.78 in System 2 to the lowest (highest degree of powerlessness) score of 7.19 in System 5. The rankings for the norm of powerlessness were then correlated with the rankings on the dependent variable of school system innovativeness. The findings reported in Table 14 indicate a rank order correlation of .976, significant at the .01 level.

**Ancillary Question b.** Is there a relationship between school system innovativeness and the degree of satisfaction with the problem-solving adequacy of professional meetings as perceived by the professional personnel?

The problem-solving adequacy of professional meetings of all types was measured by the COPED Meetings instrument. Raw scores from the respondents were used to obtain mean scores for each of the eight systems. The mean scores ranged from 7.464 (System 5) to 8.334 (System 2). Mean scores were ranked by system and correlated with the independent variable rankings. The data reported in Table 15 indicated a rank order correlation of .976 significant at the .01 level.

Table 11. Relationship of Openness in Administrative Council Meetings to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	17	7	2	14	3	7	1	15
Openness Mean Score	4.24	4.89	5.56	4.98	4.29	4.89	5.87	4.81
Openness Rank	8	6	2	3	7	4	1	5
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .048		p < .47						

Table 12. Relationship of Powerlessness in Administrative Council Meetings to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	17	7	2	14	3	7	1	15
Powerlessness Mean Score	4.37	4.81	4.78	4.55	3.52	4.41	3.93	4.52
Powerlessness Rank	6	1	2	3	8	5	7	4
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .929		p < .002						

Table 13. Relationship of Openness in Administrative Council Meetings and Building Faculty Meetings (Scores Combined) to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n*	131	44	12	72	24	52	18	82
Sum of Mean Scores*	8.09	8.91	9.31	9.14	7.73	9.02	10.13	8.85
Openness Rank	7	5	2	3	8	4	1	6
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .167		p < .36						

\*From Tables 9 and 11.

Table 14. Relationship of Powerlessness in Administrative Council Meetings and Building Faculty Meetings (Scores Combined) to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n*	131	44	12	72	24	52	18	82
Sum of Mean Scores*	8.10	8.78	8.34	8.76	7.19	8.19	7.61	8.11
Powerlessness Rank	6	1	3	2	8	4	7	5
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .976		p < .001						

\*From Tables 10 and 12

Table 15. Relationship of Problem-Solving Adequacy in Professional Meetings to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	156	58	19	139	34	71	25	110
PSA Mean Scores	7.791	8.334	8.236	8.253	7.464	8.109	7.688	7.857
Meetings PSA Rank	6	1	3	2	8	4	7	5
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .976		p < .001						

**Ancillary Question c.** Is there a relationship between school system innovativeness and the degree of satisfaction with the amount of time devoted to problem solving in professional meetings as perceived by the professional personnel?

The degree of satisfaction with the amount of time devoted to problem solving during professional meetings was determined through the use of items 38 and 39 of the Meetings Instrument. The procedures used were outlined in Chapter IV. The degree of satisfaction with the amount of time devoted to problem solving was determined by taking the absolute numerical difference between the amount of time *actually spent* and the amount of time that *ought to be spent* as perceived by each respondent. All the numerical differences were summed by school system and divided by the number of respondents. The resultant score was used as the mean score for that school system. Mean difference scores varied from 14.46 (least difference—greatest degree of satisfaction) to 26.02 (greatest difference—least degree of satisfaction). The mean scores were ranked by system and correlated with the rankings on the dependent variable of school system innovativeness. The data reported in Table 16 indicated a rank order correlation of .691, significant at the .05 level.

**Ancillary Question d.** Is there a relationship between school system innovativeness and expenditures per pupil?

All data relating to school system expenditures for the school year 1966-67 used in this section of the present study were taken from a Wisconsin Education Association research bulletin.<sup>87</sup> The Research Bulletin apportions the expenditures per pupil for Wisconsin school systems into ten categories: administration, instruction, attendance, health, transportation, operation, maintenance, fixed charges, food services, and outgoing transfers.

Three different kinds of expenditure data were utilized in the present study: total current expenditures per pupil, which included all ten expenditure categories listed above, instructional expenditures per pupil, which included only the *instruction* expenditure category listed above, and total current expenditures per pupil adjusted for school system size.

**Total current expenditures per pupil.** The current expenditures per pupil for the eight school systems participating in the study ranged from \$475 (System 4) to \$706 (System 2). These whole dollar amounts (shown in Table 17) were ranked from the highest total current expenditure per pupil to the lowest. The total current expenditure per pupil rankings were correlated with the school system rankings on the dependent variable of school system innovativeness. The data reported in Table 17 indicated a rank order correlation of .262, not significant at the .05 level.

**Instructional expenditures per pupil.** The instructional expenditures per pupil for the eight school systems ranged from \$317 (System 7) to \$515 (System 6). These amounts were ranked from the highest instructional expenditure per pupil to the lowest. The instructional expenditure rankings were correlated with the dependent variable rankings. The data reported in Table 18 indicated a rank order correlation of .476, not significant at the .05 level.

**Per pupil expenditures adjusted for school size.** Current expenditures per pupil vary according to the size of the school system. For example, in Wisconsin, for the school year 1966-67, the median per pupil expenditures varied according to the average daily membership (ADM) from \$801 for school systems with an ADM of less than 200 to \$495 for school systems with an ADM of 2200-2399 pupils. Table 19 lists the median expenditures per pupil in sixteen different ADM categories which range from less than 200 pupils to over 3000 pupils.

Table 16. The Relationship of Satisfaction with the Amount of Time Devoted to Problem Solving in Professional Meetings to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	156	58	19	139	34	71	25	110
Mean of Difference	25.84	20.60	14.57	14.46	26.02	16.01	23.80	18.61
Satisfaction Rank	7	5	2	1	8	3	6	4
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .691		p < .04						

Table 17. Relationship of Total Current Expenditures Per Pupil to School System Innovativeness

System	1	2	3	4	5	6	7	8
Expenditure Per Pupil (Dollars)	\$526	706	511	475	513	683	502	543
Expenditure Rank	4	1	6	8	5	2	7	3
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r =	.262		p < .28					

Table 18. Relationship of Instructional Expenditure Per Pupil to School System Innovativeness

System	1	2	3	4	5	6	7	8
Instructional Expenditure/Pupil (Dollars)	\$401	471	357	383	368	515	317	410
Instructional Exp. Rank	4	2	7	5	6	1	8	3
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r =	.476		p < .13					

Table 19. Median Per Pupil Expenditures by Average Daily Membership Categories

Category ADM	Per Pupil Expenditures (Whole dollar amounts)
(1) Less than 200	\$801
(2) 200-399	605
(3) 400-599	565
(4) 600-799	545
(5) 800-999	542
(6) 1000-1199	542
(7) 1200-1399	510
(8) 1400-1599	516
(9) 1600-1799	510
(10) 1800-1999	508
(11) 2000-2199	500
(12) 2200-2399	495
(13) 2400-2599	545
(14) 2600-2799	522
(15) 2800-2999	530
(16) 300 & Over	522

Adapted from *Expenditures per Pupil in Wisconsin Schools* (Wisconsin Education Association Research Bulletin 67-3 [Madison, 1967]), page 15. Data for the school year 1966-67.

Each of the eight school systems was placed in one of sixteen ADM categories appropriate to the ADM of that system for the 1966-67 school year. The state median expenditure per pupil which corresponds to the ADM category of each of the eight systems is shown in Table 20. The median expenditure per pupil figure for state school systems in the appropriate size category was subtracted from the actual 1966-67 expenditures per pupil for each of the eight school systems. The absolute difference between the actual expenditure per pupil and the state median expenditure per pupil is recorded in Table 20. The size and direction of this difference indicated the amount of money a given district was spending above or below the median amount which was spent by schools in the same size category throughout the state. For example, Table 20 indicates that System 2 spent \$184 more than the state median expenditure per pupil while System 4 spent \$47 less than the median in 1966-67.

The eight systems were ranked according to the degree that their expenditures per pupil were greater or less than the state median expenditure per pupil. The system with the greatest difference above the median was ranked 1 while the system with the greatest

difference below the median was ranked 8. The rankings were correlated with the rankings of the school systems on the dependent variable. The data reported in Table 20 indicated a rank order correlation of .334, not significant at the .05 level.

**Ancillary Question e.** Is there a relationship between school system innovativeness and age of professional personnel?

Item 4 of the biographical section of the COPED instrument requested that each respondent indicate his age in one of nine categories which range from 20-24 years (Category 1) to 60 or over (Category 9). Mean category scores computed for each system ranged from a mean category score of 3.53 for System 6 to a mean category score of 5.44 for System 5. Appropriate rankings by school system were assigned to these mean scores as shown in Table 21. These rankings were then correlated with the rankings of the school systems on the dependent variable of innovativeness. The data reported in Table 21 indicated a rank order correlation of .286, not significant at the .05 level.

Table 20. Relationship of Current Per Pupil Expenditures, Adjusted for School System Size (ADM), to School System Innovativeness

System	1	2	3	4	5	6	7	8
ADM	9860	3884	1312	10593	2567	4327	1630	7260
ADM Category (Table 19)	(16)	(16)	(7)	(16)	(13)	(16)	(9)	(16)
Expenditure/Pupil	\$526	706	511	475	513	683	502	543
State Median Exp., \$/ADM Category	\$522	522	510	522	545	522	510	522
Absolute Difference (Dollars)	+4	+184	+1	-47	-32	+161	-8	+21
Rank of Difference	4	1	5	8	7	2	6	3
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's $r = .334$		$p < .22$						

Table 21. Relationship of Age of Professional Personnel to School System Innovativeness

System	1	2	3	4	5	6	7	8
System n	156	58	19	139	34	71	25	110
System Mean Category*	5.08	4.36	4.84	4.42	5.44	3.53	4.04	4.93
Age Category Rank	7	3	5	4	8	1	2	6
Innovativeness Rank	6	1	3	2	7	4	8	5
Spearman's r = .286		p < .26						

\* Respondent age categories relevant to table: 3 = 30-34 years; 4 = 35-39; 5 = 40-44; 6 = 45-49.

## VI

### SUMMARY, CONCLUSIONS, AND IMPLICATIONS

#### SUMMARY OF THE STUDY

Basic to the study was the thesis that it is possible to determine the degree to which a school system is innovative and that certain interpersonal process norms exist within a given system which are related to system innovativeness. The innovativeness of a school system was determined by utilizing three separate procedures: one based upon a ranking of the innovativeness of the eight systems participating in the study by a panel of ten experts from the Department of Public Instruction; the second, a ranking derived from a quantitative accounting of innovations by professional personnel of a given system with the exception of the system superintendent; and third, a ranking derived from information procured during a comprehensive, structured interview with the school system superintendent. These three rankings were combined into a composite ranking which was used as the data for the dependent variable, school system innovativeness.

Data for the independent variables came from selected sections of the COPED Instrument, the single exception being school system financial data. The general methodological procedure used was to compute mean scores for each independent variable from the raw data by school system. The mean scores were used to assign an appropriate rank to the eight school systems for each of the independent variables. A rank order correlation was then computed using the rankings of the dependent variable, school system innovativeness, and the rankings of each independent variable taken separately.

The major independent variables investigated were interpersonal process norms perceived to exist in the participating school systems. These norms were analyzed at three main loci: the principal as perceived by the professional staff, the professional teaching staff, and professional staff meetings as a vehicle for school system problem solving

and for the development and integration of collective interpersonal process norms.

In addition to the above, two other independent variables were investigated: the expenditures per pupil and the age of professional personnel in the eight systems. These variables were included in the study when it was found that previous studies which investigated the relationship of school district expenditures and the age of professional personnel to school system innovativeness resulted in inconsistent findings.

Some of the limitations of this study have been acknowledged and discussed in preceding sections of this report. They are discussed in a more explicit manner at this point.

The instruments used in the present study were designed and written by members of COPED Instrument Committees. In general, the COPED package of instruments has not been adequately tested for validity or reliability. The Gross and Herriott instrument section entitled Your Principal, used here for the measurement of the variables of Executive Professional Leadership and Social Support (Hypothesis 2), has had previous study. The Norms section and the Meetings section of the instrument have had a minimum of measurement work prior to utilization in the present study. For this reason, the Norms and Meetings instrument sections were factor analyzed for use in connection with Hypotheses 1 and 3.

The number of school systems (eight) participating in the study was small. The size of the population sample was also small, particularly in the case of the smaller school systems participating in the study. However, before larger samples are procured for replication or other purposes the entire instrument should be redesigned in order that it might be more efficiently administered and analyzed. The present version tends to be cumbersome and inefficient for the subject and the researcher.

There are certain limitations connected with the fact that the eight school systems were not drawn from a random sample of systems.

It is not known how innovative the eight school systems are in comparison with a large random sample of systems drawn from an entire state or nation. Also, it is not known how the participating systems would have ranked in comparison with other systems on the independent variables.

## CONCLUSIONS BASED UPON FINDINGS OF THE STUDY

The conclusions, based upon the findings of this study, are presented in the following section in two parts. First, the measurement of the dependent variable and, then, the conclusions related to the hypotheses and ancillary questions are presented.

### Measurement of the Dependent Variable

1. The data indicate that it is possible to obtain a communality of judgment (Concordance .782) as to the innovativeness of school systems by utilizing a panel of experts who have broad, but not necessarily intimate, knowledge of the systems. The utilization of this procedure for the purposes of this study appeared to be a sound approach. Some doubt exists, however, that the same procedure could be used effectively in states where state department of education personnel have only remote connection with local school systems or when supervisory functions of such personnel have been largely replaced by consultative assistance on a random basis.

2. The findings related to the second composite ranking by a panel of experts indicated that providing "specific criteria" by which the panel could assess the innovativeness of a school system did not appreciably change their original ranking of that system. Confidence in the original ranking was further enhanced by the fact that a six-month period elapsed between the two composite rankings of the panel of experts. Replication and further research may determine the relative value of the "generalized impression" and the "specific criteria" approaches to obtaining a measure of school system innovativeness by a panel of experts.

3. The various ranking procedures indicate that a panel of experts chosen from outside the school system, professional personnel indigenous to the system, and the school system superintendent will substantially agree as to the comparative innovativeness of a given system. Further research may indicate

which of the three procedures is the most accurate and efficient means of determining system innovativeness.

### The Hypotheses and Ancillary Questions

The findings of this study support some of the hypotheses in varying degrees while other hypotheses are rejected. The null hypotheses were rejected if the level of significance of the rank order correlation was at or beyond the .05 level. A significance level of .10 was regarded as suggestive and the relationship involved was considered worthy of further exploration. The results of the study are summarized here as they related to the order of the hypotheses and ancillary questions presented in Chapter V.

**Hypothesis 1.** A significant relationship was found to exist between school system innovativeness and the interpersonal process norms of openness and trust as perceived by the professional personnel of the system. The portion of Hypothesis 1 relating to the norms of openness and trust was rejected. No significant relationship was found to exist between the interpersonal process norms of adaptiveness and school system innovativeness. The portion of Hypothesis 1 relating to the norm of adaptiveness was accepted.

**Hypothesis 2.** No significant relationship was found to exist between the executive professional leadership of the principals of a school system, as perceived by their professional staffs, and the innovativeness of that system. That portion of Hypothesis 2, relating to EPL, was accepted. However, the findings indicated a rank correlation of .476, significant at the .10 level, which can be regarded as a suggestive finding and worthy of further exploration. The social support perceived as given to faculty members by principals was found to have a significant relationship to the innovativeness of the school system. The portion of Hypothesis 2 relating to social support was rejected.

**Hypothesis 3.** No significant relationship was found to exist between the degree of openness, as a perceived interpersonal process norm in building faculty meetings held in a given school system, and the innovativeness of that system. That portion of Hypothesis 3 relating to the norm of openness was accepted. No significant relationship was found to exist between the degree of powerlessness, as a perceived interpersonal process norm in building faculty meetings held in a given school

system, and the innovativeness of that system. That portion of Hypothesis 3 relating to the norm of powerlessness was accepted.

**Ancillary Question a.** A significant relationship was found to exist between school system innovativeness and the interpersonal process norm of powerlessness as perceived in administrative council meetings by principals. No significant relationship was found to exist between school system innovativeness and the interpersonal process norm of openness in administrative council meetings as perceived by principals. Both of the above findings relating to Ancillary Question a should be interpreted with caution because of the small sample used.

**Ancillary Question b.** A significant relationship was found to exist between school system innovativeness and problem-solving adequacy of professional meetings as perceived by professional personnel.

**Ancillary Question c.** A significant relationship was found to exist between school system innovativeness and the degree of satisfaction with the amount of time devoted to problem solving in professional meetings as perceived by professional personnel.

**Ancillary Question d.** No significant relationship was found to exist between school system innovativeness and expenditures per pupil.

**Ancillary Question e.** No significant relationship was found to exist between school system innovativeness and the age of professional personnel.

In the examination of the data it was observed that the rankings given to the independent variables of powerlessness, social support, and problem-solving adequacy of meetings were virtually identical. Table 22 indicates the ranking of the three variables.

The identical ranking of powerlessness and problem-solving adequacy of meetings as perceived by the professional staff might have been expected since the variable of powerlessness was derived from a factor analysis of the data obtained by use of the Meetings Instrument, and the problem-solving adequacy variable was the result of a gross measure of the same instrument. However, openness was also derived from a factor analysis of the Meetings Instrument data and no significant relationship was evident. The rank correlation between the social support variable and the two variables pertaining to meetings discussed above was found to be significant at the .01 level.

It is conceivable that principals who are perceived to extend a high degree of social support to teachers are also able to utilize human relations skills for solving problems in professional meetings. These same social skills may also be used to reduce the degree of powerlessness as perceived by professional staff members in meetings. In the treatment of data the interpersonal process norm of powerlessness was analyzed as perceived in administrative council meetings by principals and in building faculty meetings by faculty members. When the mean scores of these two measures are combined (see Table 14) another measure of powerlessness, as it exists at the systems level, is available for analysis. This procedure was not related to a specific hypothesis or ancillary question but was initiated in order to provide additional data for the variables of openness and powerlessness in meetings.

A significant relationship was found to exist between school system innovativeness and the interpersonal process norm of trust as perceived by the professional personnel of the

Table 22. A Comparison of School System Rankings on the Variables of Powerlessness, Social Support, and Problem-Solving Adequacy

Independent Variable	System							
	1	2	3	4	5	6	7	8
	System Ranking from Mean Scores							
1. Powerlessness	6	1	3	2	8	4	7	5
2. Social Support	6	1	3	2	8	5	7	4
3. Problem-Solving Adequacy	6	1	3	2	8	4	7	5

system. This finding and the findings regarding the variables of openness and social support appear to support some of the concepts advanced by Carl Rogers (page 00) and Matthew Miles (page 00). The essential argument advanced by Rogers was that if the leader of a group establishes conditions of psychological safety and freedom, the group will spontaneously form a greater number of creative products which will be more significantly novel and the group will enjoy more effective and harmonious interpersonal relationships. Miles noted that certain phenomena characterize groups which tend to generate change and innovation. He indicated that such groups can be expected to experience high autonomy and spontaneity with freedom for creative experimentation, high quality problem solving through increased communication, and norms that actively support change. The variable of adaptiveness as used in this study would appear to provide a measure related to the norm of support for change. However, no relationship was found to exist between school system innovativeness and the interpersonal process norm of adaptiveness. This finding raises a question of whether individual propensity for change is necessarily reflected at the organization (system) level and, if it is not, what factors would account for such a situation.

## IMPLICATIONS

Change has become a permanent and integral part of modern society. If education is to become a part of the movement and momentum of social change, then more knowledge is needed regarding the effective ways and means of instituting changes and innovations in school systems. Much of the research dealing with innovation in education has utilized variables connected with the means by which innovations were introduced or diffused. Another area of research emphasis has been directed toward the characteristics of innovators. Little attention has been given to the social or psychological characteristics of the receiving system (such as a school or school system) and how these characteristics might affect the fate of a given innovation or change.

The findings reported in this study suggest that certain interpersonal relationship variables, within the context of organizational climate, may be among the most important variables to consider in initiating and maintaining innovations in educational organizations. The long term success of school system innovative efforts may be due, to a greater

degree than previously suspected, to the social-psychological state of the system's organizational climate. If it becomes possible to consistently diagnose and evaluate the "state" of a school system's organizational climate, it might be feasible to modify the adaptability of professional personnel and to change or create organizational structures and processes which enhance the possibilities of successful institutionalization of innovations. An instrument designed to provide data appropriate to such change processes, with the ultimate objective of modifying the system, might also aid in identifying conditions contributing to excessive change or unstable conditions. An analysis of such conditions might indicate that the system should achieve or return to a state of equilibrium rather than undertake extensive change efforts.

An instrument which a school system could use to assess the existing state of interpersonal relationships, or a change in those relationships over a period of time, might also furnish diagnostic information which would be of intrinsic value to the staff and to the administration. This might be particularly true of interpersonal process norms and problem-solving norms that characterize professional staff meetings. School system self-study and awareness of the degree of openness, trust, etc. perceived to exist throughout the system could be of considerable assistance to the personnel of a school system in knowing more about themselves and about the potentialities of the organization. While the cause and effect relationships of the variables used in the present study are not yet clear, the evidence suggests that future research in the area of interpersonal relationships in school systems may be particularly relevant at the present time for two reasons: teachers are beginning to work increasingly within a professional group setting as opposed to an isolated self-contained classroom and teachers are beginning to perceive themselves as a professional group capable of problem solving and self-improvement at higher levels of decision making.

The findings of this study indicate a number of other implications for educational practice and future research:

1. Efforts should be undertaken to increase awareness of the importance of human relations skills in classroom as well as organizational settings. Little is known about the importance of interpersonal process norms and interpersonal relationships between teachers and pupils in classrooms. Research is needed which will provide more knowledge about the social-

psychological climates of classrooms, how such climates are formed, and how they can be modified.

2. Professional personnel employed by school systems appear to differ in their readiness to accept and support change and innovation. Research is needed which will examine the characteristics of persons who prefer to work in innovative environments and those who prefer to work in stable environments. It is possible that school systems that are either innovative or traditional and unchanging to the extreme could hire personnel who might supply the characteristics which would bring the system into a state of controlled change or equilibrium.

3. Some form of problem-solving training, preferably integrated with human relations skills, appears to be an important consideration in preservice and inservice training programs for educators. The effectiveness of an organization is often dependent upon the ability of the members, individually or collectively, to solve problems. If time spent in professional meetings is perceived by participants as a waste of time or if participants have a sense of "going through the motions" or if they feel

powerless to make adjustments in the system, then the problem-solving potentialities of professional meetings may be adversely affected.

4. The advancement of innovative practices might be enhanced through the development of diagnostic instruments which could be administered, scored, and evaluated by personnel in the school system. Such procedures might identify administrators, teaching teams, building faculties, or professional personnel in the organization who would be particularly interested in and supportive of change efforts and innovative practices. The identification of innovative personnel could lead to the formation of a change agent team whose primary role would be to plan and coordinate processes of change within the school system.

5. The variables that are basic to the concept of organizational climate need further exploration. It is not sufficient to determine whether the organizational climate of a school system is "closed" or "open." It is important to know how and in what ways a climate becomes open and how interpersonal relationship variables in combination form an open or closed climate.

**APPENDIX A  
COPED INSTRUMENTS**

**BIOGRAPHICAL INFORMATION  
COPED FORM A-1 (DECK 40)**

In order to analyze properly your responses on the various instruments you are filling out, it is necessary to obtain information about you as an individual. These questions are not intended to be "snoopy." Instead, the intention is to gain information which will permit examination of other data in terms of groups of people who have had different backgrounds.

Please answer each question to the best of your knowledge.

1. Name of the Building in which you work \_\_\_\_\_

2. Title of your position \_\_\_\_\_  
(also, check the appropriate category below)

- 1  Teacher
- 2  Principal or assistant Principal
- 3  Guidance or psychological services
- 4  Assistant Superintendent
- 5  Superintendent
- 6  Curriculum (Supervisor, Director, Coordinator, Consultant, etc.)
- 7  Other district or central office administrator
- 8  Board member
- 9  Teacher aide
- 10  Custodial, maintenance, or lunchroom staff
- 11  Secretarial or clerical staff
- 12  Other (Please specify.) \_\_\_\_\_

3. At what level do you work?

- 1  Preschool (nursery and kindergarten)
- 2  Elementary
- 3  Middle school or junior high school
- 4  High school
- 5  Other (specify) \_\_\_\_\_
- 6  Several or all levels

4. Age:

- |                                        |                                       |
|----------------------------------------|---------------------------------------|
| 1 <input type="checkbox"/> 20-24 years | 6 <input type="checkbox"/> 45-49      |
| 2 <input type="checkbox"/> 25-29       | 7 <input type="checkbox"/> 50-54      |
| 3 <input type="checkbox"/> 30-34       | 8 <input type="checkbox"/> 55-59      |
| 4 <input type="checkbox"/> 35-39       | 9 <input type="checkbox"/> 60 or over |
| 5 <input type="checkbox"/> 40-44       |                                       |

**NORMS (DO'S AND DON'TS)  
COPEd FORM A-4 (DECKS 42-45)**

In any school system, there are informal "do's and don'ts." They are rarely written down anywhere, but they serve as a kind of code, making it clear what people in the system should and should not do if they are to be accepted by others.

Below, there is a list of specific things that a person—an administrator, a teacher, a staff member—might do or say. For each item, we would like your estimate of how many people in this system would feel that you *SHOULD* do it, and how many people would feel that you *SHOULD NOT* do it, in terms of percentages. There will always be some people who would have no feeling one way or the other.

For example:

	Percentage who would feel that you <u>SHOULD</u>		Percentage who would feel that you <u>SHOULD NOT</u>		Others (per- centage who have no feeling one way or the other)
X. Follow administra- tive directives.	<u>70</u>	+	<u>10</u>	+	<u>20</u> = 100%
Y. Complain when things are not going right.	<u>40</u>	+	<u>30</u>	+	<u>30</u> = 100%
Z. Spread rumors	<u>0</u>	+	<u>90</u>	+	<u>10</u> = 100%

Example X would show that you believed most people—70%—would feel that one *SHOULD* follow administrative directives. Only 10% would feel that you *SHOULD NOT* follow administrative directives necessarily. But there also 20% of people who have no feelings about it one way or another.

Example Y shows a different picture. It would show that you thought 40% of people in this system would feel that you *SHOULD* complain if things are not going right. On the other hand, you estimate that 30% would feel you *SHOULD NOT* complain. And there are quite a few people (30%) that you guess have no feelings about it one way or another.

In example Z, it's clear that you think *no one* would feel that spreading rumors is a good idea, and that 90% would feel that one *SHOULD NOT* do it. Even here, of course, you estimate that there are a few people—10%—who don't have a clear feeling about it one way or the other.

Your answer to each item will naturally be different. Just remember that your three figures for each item should add up to 100%. Remember: we are not concerned with what you personally think *you* should do, but with your estimate of what *others* would feel one should (or should not) do under most circumstances. We are asking you to be a kind of a detached observer of the do's and don'ts in your school system.

Now please turn to the next page and give your estimates of how other people in this system feel about "should's" and "should not's." Do not worry about being too precise. Your first intuitive guess is usually best.

	Percentage who would feel that you <u>SHOULD</u> (1)		Percentage who would feel that you <u>SHOULD NOT</u> (2)		Others (per- centage who have no feeling one way or the other) (3)	
1. Ask others who seem upset to express their feelings directly.	_____	+	_____	+	_____	= 100%
2. Tell colleagues what you really think of their work.	_____	+	_____	+	_____	= 100%
3. Look for ulterior motives in other people's behavior.	_____	+	_____	+	_____	= 100%
4. Always ask "WHY?" when you don't know.	_____	+	_____	+	_____	= 100%
5. Avoid disagreement and conflict whenever possible.	_____	+	_____	+	_____	= 100%
6. Consult with people under you in making decisions that affect them—even minor ones.	_____	+	_____	+	_____	= 100%
7. Question well-established ways of doing things.	_____	+	_____	+	_____	= 100%
8. Be concerned about other people's problems.	_____	+	_____	+	_____	= 100%
9. Only make a decision after everyone's ideas have been fully heard.	_____	+	_____	+	_____	= 100%
10. Disagree with your superior if you happen to know more about the issue than he does.	_____	+	_____	+	_____	= 100%
11. Withhold personal feelings, and stick to the logical merits of the case in any discussion.	_____	+	_____	+	_____	= 100%
12. Push for new ideas, even if they are vague or unusual.	_____	+	_____	+	_____	= 100%
13. Ask others to tell you what they really think of your work.	_____	+	_____	+	_____	= 100%
14. Keep your real thoughts and reactions to yourself, by and large.	_____	+	_____	+	_____	= 100%

Please go on to the next page.

Please continue as before. Remember, do not focus on what you personally think you should do. Rather, give your estimate of what *others* would feel one should or should not do.

	Percentage who would feel that you <u>SHOULD</u> (1)	+	Percentage who would feel that you <u>SHOULD NOT</u> (2)	+	Others (per- centages who have no feeling one way or the other) (3)	=	100%
15. Trust others not to take advantage of you.	_____	+	_____	+	_____	=	100%
16. Be skeptical about things, as a rule.	_____	+	_____	+	_____	=	100%
17. Point out other people's mistakes, to improve working effectiveness.	_____	+	_____	+	_____	=	100%
18. Listen to others' ideas, but reserve the decision to yourself.	_____	+	_____	+	_____	=	100%
19. Try out new ways of doing things, even if it's uncertain how they will work out.	_____	+	_____	+	_____	=	100%
20. Stay "cool"—keep your distance from others.	_____	+	_____	+	_____	=	100%
21. Use formal voting as a way of making decisions in small groups.	_____	+	_____	+	_____	=	100%
22. Set up committees which bypass or cut across usual channels or lines of authority.	_____	+	_____	+	_____	=	100%
23. Spend time in meetings on emotional matters which are not strictly germane to the task.	_____	+	_____	+	_____	=	100%
24. Be skeptical about accepting unusual or "way out" ideas.	_____	+	_____	+	_____	=	100%
25. Tell other people what they want to hear, rather than what you really think.	_____	+	_____	+	_____	=	100%
26. Stick with familiar ways of doing things in one's work.	_____	+	_____	+	_____	=	100%
27. Trust others to be helpful when you admit you have problems.	_____	+	_____	+	_____	=	100%

So far, you have been trying to estimate how others in this system would feel. Of course, your own personal attitudes may differ from, or be the same as, what you guess others' to be. We are very much interested in assessing what your own attitudes on these items are.

Please think about how *you, yourself*, feel about each of the items you have just answered. Naturally, your feeling will depend on the particular circumstances involved. But try to consider how you typically feel in most situations.

To indicate your answer, turn back to the beginning of this instrument and place a check (✓) in the column which shows what your own attitude is. For instance, in the first item, if you yourself felt that one should not ask others who seem upset to express their feelings directly you would check the second column. If you had no particular feeling about this matter one way or the other, you would check the third column, and so on. Think only about your own, personal feelings. Please continue checking all items, until you reach the end, item 27, on the preceding page.

**INNOVATIONS  
COPED FORM A-11  
(DECKS 56 AND 57)**

BOTH TEACHERS AND NONTEACHERS ANSWER THIS PART OF THE QUESTIONNAIRE

23. Many school systems are trying out new educational practices on a system-wide basis. A number of such practices are listed below. Please read through the list, then answer the questions on the following pages.
- A. *Independent Study*. Regularly scheduled work by individual pupils with a minimum of teacher direction.
  - B. *Language laboratory*. Audio equipment arranged to permit individual members of a class to hear speech, practice speaking, and hear playback.
  - C. *Nongraded classes*. Pupils are assigned to classes on the basis of ability, without regard to traditional one-year steps.
  - D. *Multigraded classes*. Pupils traditionally assigned to one of two or three sequential vertical grades are assigned to single classes comprising two or more grade levels; work in various subjects is determined by the individual pupil's ability within the limits of the grade-span.
  - E. *Schools-within-a-school*. The organization within a physical unit of two or more partially autonomous "schools," each with its own administrative supervisory and teaching personnel and pupils; all "schools" may be under the leadership of a single person, however.
  - F. *PSSC Physics*. The curriculum materials and teaching practices developed by the Physical Science Study Committee.
  - G. *Team teaching*. An arrangement in which two or more teachers plan and execute together the instructional program for a number of pupils, generally in the same or adjoining rooms.
  - H. *Teacher aides*. Regular employment of personnel to assist the teacher in the classroom in administrative and other non-teaching functions.
  - I. *Lay readers*. Regular employment of persons to assist the teacher in reading and grading the written work of pupils.
  - J. *Programmed Instruction*. The use of educational material so designed that each pupil works at his own pace through sequential steps, receiving immediate indication of the correctness of response has given to programmed questions. May or may not involve mechanical devices or "machines."

- K. *Work experience programs.* Programs in which students, while in school or on vacation, undertake employment, under school guidance, directly related to their educational courses.
- L. *Instructional television.* Regularly scheduled in-class viewing of televised instruction, coordinated with instruction on the same material by the classroom teacher.
- M. *Flexible scheduling.* Situation in which class size, length of class meetings, number and spacing of classes are varied according to an assessment of the nature of the subject, type of instruction, and ability and interest of students.
- N. *Modern math.* Any of the several mathematics curricula (and materials stressing newer concepts and designed around the "structure of the discipline").
- O. *Foreign language in the elementary school.* Regularly scheduled instruction in a foreign language (one or more times a week), in the grade-level span from 1 to 6.
- P. *Computer scheduling.* Allocation of students to classes in the secondary school using an electronic computer.
- Q. *Curriculum council.* A school-system-wide group of professional personnel which engages in curriculum planning and co-ordination.
- R. *i/t/a/.* The Initial Teaching Alphabet, a phonetically constant alphabet of conventional letters and symbols used for early teaching of reading.
- S. *Open enrollment.* Permission for pupils to attend a school building of their choice, even though it is not in their residential area.
- T. *8 mm sound film.* Movie film half the usual width, used in pupil-operated cartridge-loading projects.

DIRECTION: In the first column, circle the YES, ? or NO to show whether the practice is being used in the school system, to the best of your knowledge. Use the "?" if you are not sure. If you circled NO, skip to the next practice.

If you circled YES or ?, go on across the row circling the answers that apply.

	Being used in this system?	Does it affect you?*	Are you using it directly*	Should it be continued in the system?*
24. A. Independent study	YES ? NO	YES ? NO	YES ? NO	YES ? NO
B. Language laboratory	YES ? NO	YES ? NO	YES ? NO	YES ? NO
C. Nongraded classes	YES ? NO	YES ? NO	YES ? NO	YES ? NO
D. Multigraded classes	YES ? NO	YES ? NO	YES ? NO	YES ? NO
E. Schools-within-a school	YES ? NO	YES ? NO	YES ? NO	YES ? NO
F. PSSC Physics	YES ? NO	YES ? NO	YES ? NO	YES ? NO
G. Team teaching	YES ? NO	YES ? NO	YES ? NO	YES ? NO
H. Teacher aides	YES ? NO	YES ? NO	YES ? NO	YES ? NO
I. Lay readers	YES ? NO	YES ? NO	YES ? NO	YES ? NO
J. Programmed instruction	YES ? NO	YES ? NO	YES ? NO	YES ? NO
K. Work experience programs	YES ? NO	YES ? NO	YES ? NO	YES ? NO

	Being used in this system?	Does it affect you?*	Are you using it directly*	Should it be continued in the system?*
L. Instructional television	YES ? NO	YES ? NO	YES ? NO	YES ? NO
M. Flexible scheduling	YES ? NO	YES ? NO	YES ? NO	YES ? NO
N. Modern math	YES ? NO	YES ? NO	YES ? NO	YES ? NO
O. Foreign language in the elementary school	YES ? NO	YES ? NO	YES ? NO	YES ? NO
P. Computer scheduling	YES ? NO	YES ? NO	YES ? NO	YES ? NO
Q. Curriculum council	YES ? NO	YES ? NO	YES ? NO	YES ? NO
R. i/t/a	YES ? NO	YES ? NO	YES ? NO	YES ? NO
S. Open enrollment	YES ? NO	YES ? NO	YES ? NO	YES ? NO
T. 8 mm sound film	YES ? NO	YES ? NO	YES ? NO	YES ? NO

\*Responses not analyzed for this study.

**MEETINGS  
COPED FORM A-6  
(DECK 48)**

The philosopher Martin Buber once said, "All life is meeting." No matter how that statement makes you feel, you will probably agree that school systems hold a lot of meetings, and that much depends on their quality. We are thinking especially of meetings such as faculty meetings, committees, administrative staff meetings, Board sessions, department meetings, and the like.

We would like to consider *one* of these types of meetings—one which is important to you, and to which you go regularly. Specifically:

- If you are a *teacher, principal, or curriculum* worker who regularly attends a standing *central curriculum committee or council*, please consider the meetings of that group.
- If you are a *principal (not on a central curriculum group)*, please consider the meetings of the *administrative council or cabinet* to which you go.
- If you are a *teacher (not on a central curriculum group)*, please consider the *building faculty meetings* in your building.
- If you are a *Board member*, please consider meetings of the *Board*.
- If you are a *superintendent*, please consider meetings of the *Board*.

\* \* \* \* \*

Name of the meeting you are considering \_\_\_\_\_

How often does it usually meet? \_\_\_\_\_

Length of typical meeting \_\_\_\_\_

Now please consider what usually or typically happens in this meeting. For each of the items below, put one of the following numbers.

- + 3 This is *very* typical of this meeting; it happens *repeatedly*.
- + 2 This is fairly typical of this meeting; it happens *quite often*.
- + 1 This is more typical than not, but it *doesn't happen a lot*.
- 1 This is more untypical than typical, though it *does happen some*.
- 2 This is quite untypical; it *rarely* happens.
- 3 This is *not* typical at all; it *never* happens.

1. \_\_\_\_\_ When problems come up in the meeting, they are thoroughly explored until everyone understands what the problem is.
2. \_\_\_\_\_ The first solution proposed is often accepted by the group.
3. \_\_\_\_\_ People come to the meeting not knowing what is to be presented or discussed.
4. \_\_\_\_\_ People ask why the problem exists, what the causes are.
5. \_\_\_\_\_ There are many problems which people are concerned about which never get on the agenda.
6. \_\_\_\_\_ There is a tendency to propose answers without really having thought the problem and its causes through carefully.
7. \_\_\_\_\_ The group discusses the pros and cons of several different alternate solutions to a problem.
8. \_\_\_\_\_ People bring up extraneous or irrelevant matters.
9. \_\_\_\_\_ The average person in the meeting feels that his ideas have gotten into the discussion.
10. \_\_\_\_\_ Someone summarizes progress from time to time.
11. \_\_\_\_\_ Decisions are often left vague—as to what they are, and who will carry them out.
12. \_\_\_\_\_ Either before the meeting or at its beginning, any group member can easily get items on to the agenda.
13. \_\_\_\_\_ People are afraid to be openly critical or make good objections.
14. \_\_\_\_\_ The group discusses and evaluates how decisions from previous meetings worked out.
15. \_\_\_\_\_ People do not take the time to really study or define the problem they are working on.
16. \_\_\_\_\_ The same few people seem to do most of the talking during the meeting.
17. \_\_\_\_\_ People hesitate to give their true feelings about problems which are discussed.
18. \_\_\_\_\_ When a decision is made, it is clear who should carry it out, and when.
19. \_\_\_\_\_ There is a good deal of jumping from topic to topic—it's often unclear where the group is on the agenda.
20. \_\_\_\_\_ From time to time in the meeting, people openly discuss the feelings and working relationships in the group.
21. \_\_\_\_\_ The same problems seem to keep coming up over and over again from meeting to meeting.
22. \_\_\_\_\_ People don't seem to care about the meeting, or want to get involved in it.
23. \_\_\_\_\_ When the group is thinking about a problem, at least two or three different solutions are suggested.
24. \_\_\_\_\_ When there is disagreement, it tends to be smoothed over or avoided.
25. \_\_\_\_\_ Some very creative solutions come out of this group.
26. \_\_\_\_\_ Many people remain silent.
27. \_\_\_\_\_ When conflicts over decisions come up, the group does not avoid them, but really stays with the conflict and works it through.

28. \_\_\_\_\_ The results of the group's work are not worth the time it takes.
29. \_\_\_\_\_ People give their real feelings about what is happening during the meeting itself.
30. \_\_\_\_\_ People feel very committed to carrying out the solutions arrived at by the group.
31. \_\_\_\_\_ When the group is supposedly working on a problem, it is really working on some other "under the table" problem.
32. \_\_\_\_\_ People feel antagonistic or negative during the meeting.
33. \_\_\_\_\_ There is no follow-up of how decisions reached at earlier meetings worked out in practice.
34. \_\_\_\_\_ Solutions and decisions are in accord with the chairman's or leader's point of view, but not necessarily with the members'.
35. \_\_\_\_\_ There are splits or deadlocks between factions or subgroups.
36. \_\_\_\_\_ The discussion goes on and on without any decision being reached.
37. \_\_\_\_\_ People feel satisfied or positive during the meeting.

\* \* \* \* \*

Meetings vary according to their primary focus of attention. They may be mainly focused on *information-giving*—making announcements, explaining plans or rules, dealing with routine matters. Or they may be mainly focused on *problem-solving*—discussion and decision, working out answers to problems on the spot.

38. Thinking now of the meeting you have been describing, what percentage of time do you estimate is actually spent on these two kinds of activities? Fill in the figures below.

$$\begin{array}{r} \underline{\hspace{2cm}} \% \\ \text{Time spent on} \\ \text{information-giving} \end{array} + \begin{array}{r} \underline{\hspace{2cm}} \% \\ \text{Time spent on} \\ \text{problem-solving} \end{array} = 100\%$$

39. Now, still thinking of this meeting, what percentage of time do you think *should* be or ought to be spent on these two types of activities, as far as you are concerned?

$$\begin{array}{r} \underline{\hspace{2cm}} \% \\ \text{Time spent on} \\ \text{information-giving} \end{array} + \begin{array}{r} \underline{\hspace{2cm}} \% \\ \text{Time spent on} \\ \text{problem-solving} \end{array} = 100\%$$

**YOUR PRINCIPAL  
COPEd FORM A-7  
(DECK 50)**

Please check one:

- \_\_\_\_\_ If you are a teacher, or are based in a particular school building, please answer the following questions.
- \_\_\_\_\_ If you are a principal, or a central office administrator, or have some other job which is not based in a particular school building, *skip* to section A-8 of this questionnaire, entitled "COORDINATORS AND SPECIALISTS."

YOUR PRINCIPAL

To what extent does your principal engage in the following kinds of behavior? In answering, please circle the *one* number in each row that best describes the behavior of your principal.

	Never	Almost Never	Occa- sionally	Frequently	Almost Always	Always	I do not know
1. Gives teachers the feeling that their work is an "important" activity.	1	2	3	4	5	6	7
2. Gives teachers the feeling that they can make significant contributions to improving the classroom performance of their students.	1	2	3	4	5	6	7
3. Takes a strong interest in my professional development.	1	2	3	4	5	6	7
4. Makes teachers' meetings a valuable educational activity.	1	2	3	4	5	6	7
5. Helps to eliminate weaknesses in his school.	1	2	3	4	5	6	7
6. Treats teachers as professional workers.	1	2	3	4	5	6	7
7. Helps teachers to understand the sources of important problems they are facing.	1	2	3	4	5	6	7
8. Displays a strong interest in improving the quality of the educational program.	1	2	3	4	5	6	7
9. Brings to the attention of teachers educational literature that is of value to them in their jobs.	1	2	3	4	5	6	7
10. Has constructive suggestions to offer teachers in dealing with their major problems.	1	2	3	4	5	6	7
11. Gets teachers to upgrade their performance standards in their classrooms.	1	2	3	4	5	6	7

	Never	Almost Never	Occa- sionally	Frequently	Almost Always	Always	I do not know
12. Maximizes the different skills found in his faculty.	1	2	3	4	5	6	7
13. Makes a teacher's life difficult because of his administrative ineptitude.	1	2	3	4	5	6	7
14. Runs conferences and meetings in a disorganized fashion.	1	2	3	4	5	6	7
15. Has the relevant facts before making important decisions.	1	2	3	4	5	6	7
16. Displays inconsistency in his decisions.	1	2	3	4	5	6	7
17. Procrastinates in his decision making.	1	2	3	4	5	6	7
18. Requires teachers to engage in unnecessary paper work.	1	2	3	4	5	6	7
19. Displays integrity in his behavior.	1	2	3	4	5	6	7
20. Puts you at ease when you talk with him.	1	2	3	4	5	6	7
21. Makes those who work with him feel inferior to him.	1	2	3	4	5	6	7
22. Develops a real interest in your welfare.	1	2	3	4	5	6	7
23. Develops a "we feeling" in working with others.	1	2	3	4	5	6	7
24. Rubs people the wrong way.	1	2	3	4	5	6	7

**FORMAT USED FOR SUPERINTENDENT  
INTERVIEW: INNOVATIONS  
COPEd FORM S-2**

INSTRUCTIONS TO INTERVIEWER: Read introduction to superintendent and give him the List of Educational Practices (same list as on teachers' form). Then, for each of the 20 practices, complete a copy of this form.

Whether or not you ask later questions is contingent upon the answers to earlier questions:

- 1) If the superintendent has not heard about the practice, ask no further questions about it. (Question #1)
- 2) If, in response to Questions 1 through 4, the superintendent indicates that the practice is in use in his system, skip immediately to Question #5.

"The following questions deal with a number of different educational practices." (HAND SUPERINTENDENT LIST.) "I will ask you a series of questions about each practice."

Begin with *Independent Study*.

NAME OF PRACTICE \_\_\_\_\_

1. How much have you heard about (name of practice)?

\_\_\_\_\_ nothing                      \_\_\_\_\_ quite a bit  
\_\_\_\_\_ a little                        \_\_\_\_\_ a lot

2. Have you been interested in learning more about it?

\_\_\_\_\_ not at all                      \_\_\_\_\_ quite a bit  
\_\_\_\_\_ somewhat                        \_\_\_\_\_ very much

3. Have you ever sought for additional information about (practice)?

Yes \_\_\_\_\_                              No \_\_\_\_\_

IF YES: What sources of information did you use? \_\_\_\_\_

4. How seriously have you considered using this practice in your system?

\_\_\_\_\_ not at all                              \_\_\_\_\_ very seriously  
\_\_\_\_\_ not very seriously                      \_\_\_\_\_ (is in use)  
\_\_\_\_\_ somewhat seriously

5. Have you engaged in a trial, pilot, or preliminary small-scale use of (practice) in this system? (IF ALREADY IN USE, ASK "Did you engage ...")

Yes \_\_\_\_\_                              No \_\_\_\_\_

IF YES: When? \_\_\_\_\_

6. Are you now using it in your system on a regular, routine basis?

Yes \_\_\_\_\_                              No \_\_\_\_\_

- IF YES:
- a. How extensively—how many buildings are involved?
  - b.                                              how many teachers are involved?
  - c. In what year did you start using it on a routine basis?

IF NO: d. Do you think you will ever use it routinely in this system?

Yes \_\_\_\_\_                              No \_\_\_\_\_

IF NO: Why not?

**APPENDIX B**  
**FACTOR LOADINGS RESULTING FROM THE FACTOR ANALYSIS**  
**OF THE NORMS (DO'S AND DON'TS) INSTRUMENT SECTION**

	FACTORS*						h <sup>2</sup>
	Openness 1	Adaptiveness 2	Trust 3	4	5	6	
1. Ask others to express feelings	-.33						17
2. Evaluate others' work	-.59						38
3. Look for ulterior motives			-.31				10
4. Always ask why		-.25					10
5. Avoid disagreement	.34						15
6. Consult with subordinates				.41			20
7. Question established ways	-.24	-.29				-.28	28
8. Be concerned with others' problems	-.31						19
9. Make decision after all heard				.46			25
10. Disagree with superior	-.37					-.27	25
11. Withhold personal feelings					.25		08
12. Push for new ideas		-.52					29
13. Ask others to evaluate you	-.46						25
14. Keep thoughts to self	.36				.25		21
15. Trust others			.38				16
16. Be skeptical			-.39				19
17. Point out mistakes	-.50						26
18. Reserve decision to self					.37		15
19. Try out new ways		-.38					19
20. Stay cool/others			-.35		.28		25
21. Use formal voting				.34			13
22. Cut across channels						-.25	08
23. Spend time on emotions							04
24. Be skeptical of way out		.45					23
25. Tell others what they want	.25						10
26. Stick with familiar		.38					25

\* Six factors were rotated. Factor loadings of less than .24 are not shown above. Items with loadings of .30 or better were utilized for the present study. Factors having less than four items with loadings of .30 or better were not utilized.

**APPENDIX C**  
**PERCENTAGE RESPONSES BY SYSTEM AND BY QUESTIONNAIRE ITEM**  
**OF THE NORMS (DO'S AND DON'TS) INSTRUMENT SECTION**

Question*	System								Mean Total (%)	n. for Question
	1	2	3	4	5	6	7	8		
<u>Factor: Openness</u>										
1	.77	.84	.72	.78	.58	.88	.67	.77	.78	582
2	.35	.31	.56	.44	.41	.34	.25	.34	.37	579
5	.36	.34	.50	.27	.26	.30	.33	.27	.32	585
8	.86	.90	.78	.88	.93	.93	.92	.85	.88	582
10	.70	.76	.56	.68	.73	.71	.54	.73	.70	585
13	.58	.68	.71	.62	.48	.57	.83	.49	.58	583
14	.62	.48	.72	.60	.45	.64	.50	.60	.59	583
17	.42	.43	.67	.56	.48	.33	.50	.42	.46	583
	466	474	522	483	432	470	454	447	Sum	
	58.2	59.2	65.2	60.3	54.0	58.0	58.7	55.8	Mean Score (%)	
	5	3	1	2	8	4	6	7	System Rank	
	6	1	3	2	7	4	8	5	**I. Rank	
<u>Factor: Adaptiveness</u>										
12	.61	.53	.56	.53	.45	.66	.54	.52	.56	582
19	.91	.92	.89	.89	.94	.81	.79	.90	.88	586
24	.40	.38	.50	.29	.45	.38	.29	.42	.38	583
26	.71	.65	.84	.63	.64	.67	.54	.60	.65	581
	263	248	279	234	248	252	216	244	Sum	
	65.7	62.0	69.7	58.5	62.0	63.0	54.0	61.0	Mean Score (%)	
	2	5	1	7	5	3	8	6	System Rank	
	6	1	3	2	7	4	8	5	**I. Rank	
<u>Factor: Trust</u>										
3	.63	.71	.72	.72	.68	.73	.67	.74	.69	583
15	.84	.91	.89	.87	.71	.83	.83	.78	.83	585
16	.67	.72	.72	.76	.81	.70	.67	.70	.71	583
20	.77	.84	.89	.81	.72	.84	.63	.76	.78	583
	291	318	322	316	292	310	280	298	Sum	
	72.7	79.5	80.5	79.0	73.0	77.5	70.0	74.5	Mean Score (%)	
	7	2	1	3	6	4	8	5	System Rank	
	6	1	3	2	7	4	8	5	**I. Rank	
System n	150	53	17	129	28	67	23	104		
Range***	154	55	18	131	32	69	24	106		

\*Questions included with factor loading of .30 or better.

\*\*I. Rank refers to Innovativeness Rank (dependent variable)

\*\*\*The upper figure indicates the least number of respondents completing the questionnaire from that system; the lower figure the greatest number responding. The range of n is accounted for by garbled or missing responses to certain questionnaire items.

**APPENDIX D**  
**FACTOR LOADINGS RESULTING FROM FACTOR ANALYSIS**  
**OF THE MEETINGS INSTRUMENT**

Question	FACTORS*					h <sup>2</sup>
	Powerlessness		Openness			
	1	2	3	4	5	
1. Problems explored & understood	-.42		-.59			54
2. 1st solution accepted by group						16
3. People attend not knowing solution	-.37					25
4. People ask why problem exist-causes			-.49			30
5. Important problems not on agenda	-.55					46
6. Answers proposed without thought	-.64					53
7. Alternate solutions discussed			-.67			55
8. Irrelevant matters discussed	-.61					39
9. Most ideas discussed			-.55		-.21	40
10. Progress is summarized			-.57			49
11. Decisions left vague	-.63					47
12. People can get items on agenda			-.41			25
13. People are afraid to criticize			-.42			56
14. Previous meetings discussed			-.58			50
15. Problem not well studied	-.59					47
16. People monopolize discussion	-.45				-.43	54
17. People hold back true feelings	-.40		-.41		-.36	67
18. After decision; procedure clear	-.53					49
19. Topic jumping; unclear progress	-.65					47
20. Feelings discussed openly			-.41		-.20	22
21. Same problems repeatedly come up	-.70					50
22. People don't care about meeting	-.60					59
23. Several solutions suggested			-.57		-.25	38
24. Disagreement avoided	-.35					23
25. Creative solutions offered	-.38		-.55			50
26. People remain silent	-.38		-.40		-.53	67
27. Group works through conflict	-.39		-.53			47
28. Results not worth the time	-.64				-.21	57
29. Real feelings expressed			-.47		-.24	39
30. Group committed carry out solutions	-.49					45
31. Group works on "hidden agenda"	-.44					25
32. People antagonistic in meeting	-.61					53
33. No follow-up of earlier meetings	-.48					41
34. Decisions dominated by leader	-.37		-.40			42
35. Splits and deadlocks exist	-.56					34
36. Endless talk without decision	-.72					60
37. People satisfied with meeting	-.58					63

\*Ten factors were rotated. Factor loadings of less than .20 are not shown above. Only items with loadings of .50 or better were utilized for the present study. Factors having less than four items with loadings of .50 or better were not utilized. Columns 6 through 10 are not shown since no meaningful factor pattern could be identified.

**APPENDIX E**  
**THE EXPERT PANEL: QUESTIONNAIRES AND RANKINGS**

**SCHOOL SYSTEM  
 INNOVATIVENESS QUESTIONNAIRE**

This questionnaire is related to an extensive R & D Center effort called the Planned Change Project. Briefly, the Project involves the study of change that occurs in a school system over a period of time, given certain inputs to the system. A part of the overall study will be concerned with innovative characteristics of school systems.

Because of your experiences in working with Wisconsin school systems we are asking you for information regarding the degree of *innovativeness* of eight school systems listed below. Your responses will be held in strict confidence. We are not asking for your name, but it may be helpful if it becomes necessary to obtain additional and related information at a later date. After you have finished, please place this sheet in the stamped envelope provided and mail at your earliest convenience.

PROCEDURE: Study the attached list of school systems and indicate your perception of the degree of innovativeness in the blank provided by ranking the systems on the basis of 1 to 8. A rank of *one* will indicate the school system with the *least* amount of innovativeness while a rank of *eight* will indicate the *greatest* amount of innovativeness.

School systems vary in their degree of innovativeness over a period of time. Your ranking should reflect your best estimate or impressions as of the 1966-67 school year. We recognize that your contacts with these school systems may have been sporadic or minimal. However, perceptions or impressions as to the innovative character of a system can be gleaned in a number of ways other than formal and/or extensive visits to the system. In considering the innovativeness of a school *system* use the following as a general guideline for your ranking:

*Innovativeness* is a species of the genus "change." Generally speaking, it seems useful to define an innovation as a deliberate, novel, specific change, which is thought to be more efficacious in accomplishing the goals of a system. Consider local innovations as being willed and planned for, rather than occurring haphazardly.

<u>Innovativeness Rank</u>	<u>School System (code)</u>	<u>Innovativeness Rank</u>	<u>School System (code)</u>
_____	8	_____	7
_____	4	_____	6
_____	5	_____	2
_____	1	_____	3

**QUALIFICATIONS OF  
DPI PERSONNEL**

This questionnaire solicits your opinion of the relative qualifications of other DPI personnel to make the same judgments you just made in the *Innovativeness Questionnaire*. A check in the "high" box indicates that, in your opinion, the person named has had considerable experience with the DPI which would allow him (her) to make a rational judgment as to the comparative innovativeness of the eight school systems. The "low" box indicates that the persons named, because of limited experience and related factors, would have difficulty in making a valid judgment. The results will be used to reduce the list of names to about fifteen people who will then be asked to react to the Innovative questionnaire.

Name	High	Average	Low
Mr. John Doe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*			
*			
*			
Mrs. Mary Smith	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\* 50 Names used.

**ORIGINAL RANKING OF EXPERT PANEL  
AND COMPUTATION OF KENDALL'S  
COEFFICIENT OF CONCORDANCE**

Experts	School System							
	8	4	5	1	7	6	2	3
1	4	6	2	3	1	8	7	5
2	2	5	1	4	3	6	8	7
3	1	6	2	4	3	7	5	8
4	3	8	2	5	1	6	7	4
5	3	6	2	5	1	8	4	7
6	4	8	2	3	1	6	7	5
7	5	8	2	3	1	7	6	4
8	3	5	2	4	1	8	7	6
9	4	6	3	2	1	7	5	8
10	<u>2</u>	<u>7</u>	<u>1</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>6</u>	<u>8</u>
Totals	31	65	19	37	16	68	62	$62 / \frac{360}{8} = 45$

Kendall's Coefficient of Concordance  $W = .782$

$\chi^2_r = 54.73$  (significant .01 level)

## RESPONSES TO FIRST FOLLOW-UP

### Respondent A:

1. Socio-economic characteristics of community including climate of receptiveness to improvement of education.
2. Educational leadership of superintendent and staff.
3. Superintendents readiness to adapt to change as reflected in educational programs, facilities, equipment, etc.
4. Professional attitudes and activities to staff in local, regional and state associations, conferences, work-shops and committees.
5. Improvements accomplished.

### Respondent B:

1. Responsiveness of central office personnel in discussion of innovative practices.
2. Imaginative use of services or funds made available to the district by, or with the knowledge of, State Department personnel.
3. Response of teachers as encountered in supervisory visits, committee work or casual contacts related to openness of ideas or their indication of the feasibility of change in their schools.
4. Observation of visible programs such as summer school and federal aid proposals or use of such federal funds.

### Respondent C:

1. Actual knowledge of the school as gained by a supervisory visit.
2. Informal conferences with the administrator either in his school, in the Department office, or at a professional meeting or other informal contact.
3. Thorough knowledge gained directly or indirectly by discussion with other Department staff members, other administrators, or university personnel who have cooperated with the school on one or more projects.

### Respondent D:

1. Personal acquaintance with administrators.
2. An opportunity through visits to their schools or through committee work to become familiar with their philosophy of education and their ideas relative to implementing said philosophy.
3. Personal and working acquaintance with principals, supervisors/coordinators and teachers in the system.
4. Actual on-site visits of classrooms.
5. The manner in which they approached the task of planning, implementing, and evaluating their program for disadvantaged children.
6. The kind of information that is being disseminated by the school relative to various aspects of its educational program.

### Respondent E:

1. Contact with \_\_\_\_\_ school personnel; a report of visits to the \_\_\_\_\_ system, a knowledge of difficulties encountered during a building program a few years ago.
2. Rather extensive contact with school personnel. Visits to the \_\_\_\_\_ system; participation in a special study on mental health over an extended period of time.
3. Information gleaned from reports written concerning the \_\_\_\_\_ School system.
4. Contact with members of \_\_\_\_\_ staff; frequent correspondence with the Superintendent of Schools at \_\_\_\_\_.

5. Information regarding the setting up of the \_\_\_\_\_ district over the last number of years; supervisory and classification reports from \_\_\_\_\_.
6. Knowledge of the community, frequent visits with the Superintendent of Schools; a visit to the school system; knowledge concerning the willingness of the local board of education to upgrade the qualifications of superintendents, both the past superintendent and the present superintendent.
7. Visit to the school system in an advisory capacity; frequent contacts with school personnel; knowledge of participation by the Public Schools in both University-sponsored and Department-sponsored projects.
8. A visit to the school; contacts with school personnel; reports of visits by Department members.

Respondent F:

1. Leadership of administrative and supervisory personnel.
2. Separate funds devoted to innovative programs.
3. Requests for assistance in developing innovative programs from our department and other outside agencies.
4. Participation in curriculum studies and projects which are known nationally.
5. Degree of professionalism exhibited by teaching staff.
6. General attitude of board of education regarding innovation.
7. General community atmosphere regarding its schools.

Respondent G:

I ranked the schools on innovativeness on the basis of personal observation, articles in the news releases, speeches given by local supervisors and teachers, and supervisor "talk" or "gossip" in the Department.

## SECOND FOLLOW-UP

### Criteria Used

#### Innovative School systems:

1. generally utilize adequate financial resources in order to support innovative practices and programs in a consistent and well-balanced manner.
2. are generally found in communities which have values, norms or attitudes which are supportive of innovation and change.
3. retain administrators who exert leadership in order to influence innovation adoption and who are perceived as being supportive of change and innovation.
4. have professional staffs that tend to seek out external sources of information by participating in workshops, meetings, conferences, etc. and maintaining close contacts with state departments of education, universities, and laboratory or experimental schools.
5. tend to have organizational structures (committees, teams, formally organized groups) which are to seek out, consider, institutionalize and evaluate innovations.
6. have staffs that are generally willing and able to take professional risks. They could be characterized as dissatisfied with the status quo, venturesome, avant-garde, adaptable, or deviant.
7. tend to institutionalize changes that operate beyond the superficial, i.e., innovations that require alteration of the normative structure of the organization as opposed to mere adoption of technical hardware.
8. have professional staffs that exhibit social characteristics, social relationships, and communication behaviors which tend to create an organizational climate conducive to innovation and change.

### Rankings by Expert Panel

Expert one

Criteria	School System							
	8	4	5	1	7	6	2	3
1	8	3	7	5	6	1	2	4
2	7	4	8	5	6	1	2	3
3	7	3	8	4	6	1	2	5
4	7	4	8	3	5	1	2	6
5	7	4	8	3	6	1	2	5
6	7	4	8	5	6	1	2	3
7	7	4	8	5	6	1	2	3
8	6	3	8	4	7	1	2	5
$\Sigma$	56	29	63	34	48	8	16	34
$\Sigma$ Rank	7	3	8	5	6	1	2	4

Expert two

Criteria	School System							
	8	4	5	1	7	6	2	3
1	4	1	7	6	8	2	5	3
2	3	2	8	6	7	1	4	5
3	4	3	8	7	6	1	5	2
4	5	4	8	7	6	1	2	3
5	4	1	7	8	6	2	3	5
6	4	2	8	6	7	1	3	5
7	3	1	6	7	8	2	5	4
8	4	2	8	6	5	1	3	7
$\Sigma$	31	16	60	53	53	11	30	34
$\Sigma$ Rank	4	2	8	7	6	1	3	5

Expert three

Criteria	School System							
	8	4	5	1	7	6	2	3
1	3	2	6	4	8	1	7	5
2	3	5	7	4	8	1	6	2
3	2	4	5	3	8	1	7	6
4	5	2	7	4	8	1	3	6
5	3	4	6	2	8	1	7	5
6	3	2	7	6	8	1	5	4
7	4	5	7	2	8	1	6	3
8	3	8	6	2	7	1	5	4
$\Sigma$	26	32	51	27	63	8	46	35
$\Sigma$ Rank	2	4	7	3	8	1	6	5

Expert four

Criteria	School System							
	8	4	5	1	7	6	2	3
1	4	1	5	6	8	2	3	7
2	8	6	5	7	4	1	2	3
3	4	1	3	2	7	5	6	8
4	4	1	7	2	8	5	3	6
5	4	2	6	3	8	5	1	7
6	6	1	7	5	8	4	2	3
7	6	3	7	5	8	2	4	1
8	4	1	7	3	8	5	2	6
$\Sigma$	40	16	47	33	59	29	23	41
$\Sigma$ Rank	5	1	7	4	8	3	2	6

Expert five

Criteria	School System							
	8	4	5	1	7	6	2	3
1	8	5	7	4	6	1	2	3
2	8	4	7	5	6	2	1	3
3	7	4	8	5	6	3	2	1
4	8	1	7	6	5	2	3	4
5	8	5	7	4	6	2	1	3
6	7	5	8	4	6	3	1	2
7	8	4	7	5	6	1	2	3
8	8	2	7	6	5	1	3	4
$\Sigma$	62	30	58	39	46	15	15	23
$\Sigma$ Rank	8	4	7	5	6	1	2	3

Expert six

Criteria	School System							
	8	4	5	1	7	6	2	3
1	5	7	4	3	6	1	8	2
2	5	3	7	6	8	1	4	2
3	5	4	7	6	8	1	3	2
4	6	3	7	5	8	1	2	4
5	5	3	7	6	8	1	2	4
6	6	4	7	5	8	2	1	3
7	5	4	7	6	8	2	1	3
8	5	2	7	6	8	1	3	4
$\Sigma$	42	30	53	43	62	10	24	24
$\Sigma$ Rank	5	4	7	6	8	1	3	2

Expert seven

Criteria	School System							
	8	4	5	1	7	6	2	3
1	7	1	6	2	8	3	4	5
2	7	1	6	3	8	2	4	5
3	7	1	5	2	8	3	6	4
4	7	1	4	3	8	2	5	6
5	7	1	6	3	8	2	4	5
6	7	1	5	4	8	2	3	6
7	7	1	6	3	8	2	4	5
8	7	1	5	4	8	2	3	6
$\Sigma$	56	8	43	24	64	18	33	42
$\Sigma$ Rank	7	1	6	3	8	2	4	5

Expert nine

Criteria	School System							
	8	4	5	1	7	6	2	3
1	6	3	7	2	8	1	4	5
2	6	3	7	2	8	1	4	5
3	5	3	7	2	8	1	4	6
4	6	3	7	2	8	1	4	5
5	6	3	7	2	8	1	4	5
6	6	3	7	2	8	1	4	5
7	6	3	7	2	8	1	4	5
8	6	3	7	2	8	1	4	5
$\Sigma$	47	24	56	16	64	8	32	41
$\Sigma$ Rank	6	3	7	2	8	1	4	5

Expert eight

Criteria	School System							
	8	4	5	1	7	6	2	3
1	7	4	6	1	8	2	5	3
2	8	3	7	5	6	1	4	2
3	5	1	8	2	7	3	4	6
4	8	3	7	1	6	2	4	5
5	7	3	8	4	6	2	5	1
6	7	1	8	3	6	2	4	5
7	8	3	7	5	6	2	4	1
8	7	2	8	4	6	1	3	5
$\Sigma$	57	20	59	25	51	15	33	28
$\Sigma$ Rank	7	2	8	3	6	1	5	4

Expert ten

Criteria	School System							
	8	4	5	1	7	6	2	3
1	8	1	7	4	6	2	3	5
2	8	3	7	5	6	2	4	1
3	8	3	7	6	5	4	2	1
4	8	2	6	7	5	3	4	1
5	8	2	6	7	5	3	4	1
6	8	3	6	7	4	2	5	1
7	8	3	6	7	5	2	4	1
8	8	3	6	7	4	2	5	1
$\Sigma$	64	20	51	50	40	20	31	12
$\Sigma$ Rank	8	3	7	6	5	2	4	1

Kendall's Coefficient of Concordance of Ten Experts Final Ranking

System:	8	4	5	1	7	6	2	3
$\Sigma$ of 10 Scores:	481	225	541	344	550	142	283	314
Ranking:	6	2	7	5	8	1	3	4

$W = .693$

$\chi^2 = 48.53$  (sig. at .01 level)

**APPENDIX F**  
**SUMMARY OF PROFESSIONAL PERSONNEL RESPONSES TO INNOVATIONS**  
**INSTRUMENT SECTION AND SUPERINTENDENT RESPONSES**  
**TO INNOVATIONS PORTION OF INTERVIEW**

Educational Practice	School System							
	1	2	3	4	5	6	7	8
1. Independent Study	4/64	6/87	6/85	6/57	2/76	2/70	1/52	4/66
2. Language Laboratory	6/80	6/91	6/80	6/83	5/85	6/90	6/100	6/81
3. Ungraded classes	6/68	6/63	4/10	4/61	5/11	3/31	1/20	6/47
4. Multigraded classes	5/69	6/67	1/20	5/18	1/26	1/40	6/20	1/41
5. School within school	1/4	2/1	1/0	2/6	1/5	6/74	1/24	2/4
6. PSSC physics	6/27	4/22	5/30	4/30	5/61	6/47	1/12	5/24
7. Team teaching	5/86	5/94	5/65	6/100	5/85	5/74	2/4	6/85
8. Teacher aides	5/64	5/81	6/90	6/72	2/20	6/85	6/28	6/55
9. Lay readers	6/73	5/46	1/5	6/83	5/29	2/48	4/0	1/10
10. Programmed Instruction	3/45	5/81	4/60	4/50	1/64	4/68	5/44	4/64
11. Instructional TV	4/47	5/56	6/55	6/69	4/41	2/55	2/4	4/55
12. Flexible scheduling	2/27	6/87	6/80	2/41	2/26	2/40	1/44	1/45
13. Work Experience	2/40	6/74	6/25	6/71	5/64	4/83	2/12	4/19
14. Computer scheduling	4/4	6/75	6/60	6/69	6/58	6/68	2/0	6/52
15. Curriculum Council	6/55	6/79	6/35	6/75	6/55	2/37	6/24	6/86
16. Modern Math	6/91	6/96	6/100	6/97	6/100	6/95	6/92	6/91
17. Elem. School Foreign Language	1/14	6/44	5/90	3/38	1/50	3/39	2/12	4/33
18. i/t/a	1/14	4/81	2/5	2/6	1/8	2/9	1/16	4/57
19. Open Enrollment	1/2	5/10	1/0	1/1	1/5	1/6	1/4	1/2
20. 8 mm film	4/18	5/29	1/10	4/30	2/44	4/17	6/44	4/35
TOTAL % (over 50%)	650	1112	765	837	648	762	244	692
Instrument Ranking	6	1	3	2	7	4	8	5
Total (Supt.) Score	78	105	84	91	66	73	62	81
Interview Ranking	5	1	3	2	7	6	8	4

Note.—For each practice listed, first number indicates scores for superintendent interview responses.

- 6 - In use extensively (more than one building, if applicable; involving some significant fraction—at least 1/3—of the teachers for whom it's relevant—a crude estimate will be sufficient).
- 5 - In use: can't decide whether extensively or partially (or)
  - In use partially (only one of a number of buildings; only a few teachers, when the innovation should be relevant for many; etc.).
- 4 - Have tried or made pilot use, will probably use routinely in future.
- 3 - Have tried or made pilot use, will probably *not* use routinely in future.
- 2 - Have not tried, isn't in use, but probably will use.
- 1 - None of the above: not in use or likely to be used.

Second number indicates percentage of teachers responding that the practice was "being used in the system." Underline of second number indicates over 50%; others were not tabulated for totals.

Scoring system (weighted numbers shown above) formulated by Warren Hagstrom, R & D Center, University of Wisconsin.

## NOTES

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45. Harbans S. Bholra, *The Configurational Theory of Innovation Diffusion* (Columbus: School of Education, Ohio State University, 1965), p. 7.

46. *Ibid.*, p. 13.

47. *Ibid.*, p. 14.

48. *Ibid.*, p. 19.

49. Harbans S. Bholra, *Innovation Research and Theory* (Columbus: School of Education, Ohio State University, 1965), p. 155.

50. *Ibid.*, pp. 21-27.

51. Max R. Goodson, "Models for Effecting Planned Educational Change," *Project MODELS: Maximizing Opportunities for Development and Experimentation in Learning in the Schools*, H. J. Klausmeier *et al.* (Occasional Paper No. 3, Madison, Wis.: Research and Development Center for Cognitive Learning, 1966), p. 21.

52. *Ibid.*, p. 25.

53. Kurt Lewin, *Field Theory in Social Science* (New York: Harper & Brothers, 1951), p. 44.

54. Based upon studies in progress at the R & D Center for Cognitive Learning, University of Wisconsin. Change-agent teams composed of teachers, administrators and/or central office personnel are working to institutionalize change and innovation at the school system level.

55. Goodwin Watson, "Resistance to Change," *Concepts for Social Change*, ed. Goodwin Watson (Washington, D.C.: National Education Association, 1967), pp. 12-23.

56. Donald Klein, "Some Notes on the Dynamics of Resistance to Change: The Defender Role," *Concepts for Social Change*, ed. Goodwin Watson (Washington, D.C.: National Education Association, 1967), pp. 26-27.

57. Keith Goldhammer, *Issues and Strategies in the Public Acceptance of Educational Change*, paper presented to the Conference on Educational Issues in a Changing World (Eugene, Ore.: C.E.S.E.A., 1965), p. 20.

58. Miles, *op. cit.*, pp. 20-25.

59. D. E. Griffiths, "Administrative Theory and Change in Education," *Innovation in Education*, ed. Matthew Miles (New York: Bureau of Publications, Columbia University, 1964), p. 431.

60. March and Simon, *op. cit.*, *passim*.

61. Pellegrin, *op. cit.*, p. 15.

62. Halpin, *op. cit.*, p. 131.

63. *Ibid.*, p. 137.

64. John B. Miner, *The School Administrator and Organizational Character* (Eugene, Ore.: C.A.S.E.A., 1967), p. 86.

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67. *Ibid.*, p. 41.

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68. Eric Berne, *Games People Play* (New York: Grove Press, 1964), pp. 29-34.

69. Carl R. Rogers, *Toward a Theory of Creativity, A Source Book for Creative Thinking*, eds. S. J. Parnes and H. J. Harding (New York: Scribners & Sons, 1962), p. 70.

70. *Ibid.*, p. 70.

71. *Ibid.*, p. 71.

72. *Ibid.*, p. 72.

73. Carl R. Rogers, *On Becoming a Person: Therapists' View of Psychotherapy* (Boston: Houghton Mifflin, 1961), pp. 370-371.

74. Miles, "Planned Change . . .," p. 21.  
75. Bennis, *op. cit.*, p. 58.

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76. COPED is currently an informal consortium of eight universities and colleges established for the exploratory development of models of planned change in education. The network is coordinated by the National Training Laboratories of the NEA.

77. Instrument Committee of COPED, *Instrument Guide Book, 1965-1966*. The original instrument entitled this section *Do's and Don'ts*, referring to informal codes of behavior that exist in most organizations. However, "Norms" would appear to be a more descriptive title and is used in the present study.

78. *Program IMAGE: 1604 Program* (Madison, Wis.: Mass Communications Research Center, University of Wisconsin). This program is capable of performing several types of factor analysis. The particular solution desired must be specified on a control card at the time the data are run. The program includes a normalized varimax rotation. Regardless of the solution specified, the general numeric method of solution is by the principal components procedure. The specific options of the program determine the particular matrix

to be factored by the principal components solution. A detailed exposition of the specific solutions available in this program is given in "Some Rao-Guttman Relationships" by Chester W. Harris in *Psychometrika*, XXVII (September, 1962), 247-263.

79. COPED, *Instrument Guide Book, op. cit.*

80. *Program IMAGE*, see Note 78.

81. Neal Gross and R. E. Herriott, *Staff Leadership in Public Schools* (New York: Wiley, 1965), p. 247.

82. Maurice G. Kendall, *Rank Correlation Methods* (New York: Hafner Publishing Company, 1955), p. 95.

83. *Ibid.*, p. 98.

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84. E. G. Olds, "Distributions of Sums of Squares of Rank Differences for Small Numbers of Individuals," *Annals of Mathematical Statistics*, IX (1938), 133-149.

85. Items 13 through 18 provided measures for managerial support but this section of the instrument was not utilized for the present study.

86. COPED *Instrument Manual, op. cit.*

87. *Expenditures per Pupil in Wisconsin Schools* (Wisconsin Education Association Research Bulletin 67-3 [Madison, 1967]).

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